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## CURRENT ECONOMIC COMMENT

N I V E R S I T Y O F I L L I N O I

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# What's Air-Mail Subsidy All About?

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SINCE V-J Day in 1945, our domestic and international airlines have received over half a billion dollars in mail pay. Of this amount, \$125 million, or a quarter of the six-year total, was paid out during the year ended June 30, 1951.

These large sums have been given out to the airlines by the Civil Aeronautics Board through the Post Office Department with little or no knowledge of what is fair compensation for performing mail service. The designation "air-mail pay" is in fact a false front, concealing what these payments really contain. For not only may they cover the airlines' cost of carrying the mail, but also an excess above this compensation pay which can be considered only as subsidy. It is to bring this element into the open that the Senate passed a bill providing for subsidy payments by the Board, separate and distinct from the money paid to airlines by the Post Office Department for mail service only; a companion measure has been reported out of the House Committee on Interstate and Foreign Commerce.

What is subsidy? What's its purpose? And what part has it played in our economy? The answers to these questions will be helpful in understanding the subsidy policy of our Government toward air transportation and the relation to that policy of the enacted

and pending legislation to revise the present system of air-mail pay.

According to Webster's Dictionary, *subsidy* is defined in several ways, two of which are particularly applicable for present purposes. The first definition states that subsidy is: "Any gift of money or property made by one person to another by way of financial aid."

The second definition, and one which is often overlooked, calls subsidy "A grant of funds or property from a government . . . to a private person or company to assist in the establishment or support of an enterprise *deemed advantageous to the public.*" (italics mine)

Unfortunately a subsidy is in many instances considered to be merely a handout, as implied in the first of the definitions, even though the grantor is the Federal, state, or local government. The only social justification for such a policy is the furtherance of the public welfare, a fact that only too frequently escapes notice. This oversight on the part of many people is doubtless responsible for the derogatory connotation that may attach itself to the term, even though we dwell in the midst of subsidies, direct and indirect.

We are surrounded by subsidies in various forms. There are farm subsidies which have taken the form of parity payments, and in the early days of our nation, homestead land grants to encourage the development of new farmlands. During the dismal decade of the

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1930's, farmers were given direct cash payments for reduction of output, by virtue of which the crop producers obtained a larger return than sole dependence on market prices could give. A different purpose was served by the subsidies granted to the farmers during World War II. In this case, the objective was to hold down consumer prices by compensating food producers for a rollback in their selling prices to a level below that prevailing in the open market. The subsidy was paid the farmers and benefited the public, which was protected against high prices.

Here then are three ways in which farmers have been subsidized; the subsidies have shared the common purpose of furthering the public welfare. The homestead grants opened new sources of food supply; the output reduction payments contributed to market stability and redistribution of income; and the rollback subsidies gave lower prices to consumers.

Farmers also have been protected against foreign competition by high tariffs on imported hides, wool, and other products. This protection is not "subsidy" in the narrow sense of the term, since it does not involve direct grants of funds or property to the recipients. However, it may be considered a form of indirect subsidization since the incomes of the farmers are thereby augmented. The same is true of all infant industries which, through tariff protection, are shielded against competition from foreign exports.

Labor, too, has been subsidized in various ways. During the early part of the New Deal administration, the work relief programs of the Works Progress

Administration and the Public Works Administration, and the tree-planting activities of the Civilian Conservation Corps were all forms of temporary subsidies, granted to keep our economy from bogging down. These subsidization policies were followed by others of a more permanent character such as social security benefits and low-cost public housing.

These aids to labor are subsidies in a different sense from those described for farmers. Funds paid out for work relief projects brought in some return in the form of services which added to the capital of the nation. To the extent that such services were paid for at a rate greater than fair market value, the payments may be considered as subsidies. However, this market value would be difficult to determine since many of these services represented "made" work for which there was no commercial demand.

On the other hand, social security benefits including unemployment insurance and old-age pensions can be justified on the grounds of assuring the industrial working population of a more regular and somewhat augmented participation in the national real income produced annually. Unemployment compensation is an outright grant by most states to the idle worker, paid for by a tax upon employers. No contribution is made by the worker except in a few states. Old-age pensions differ in requiring the worker as well as the employer to contribute toward a Federal government pension fund. In both cases the employer contributions may be regarded as indirect grants to the worker over and above his wages. In this sense they represent subsidies.



Low cost housing subsidies have for their purpose the provision of sanitary, safe, and decent dwelling places for families of low income. This program is financed by the national and local governments, and the families occupying these low cost housing developments make only a small contribution toward the construction and carrying costs of the projects.

If space and the reader's patience permitted, the list of subsidy recipients could be expanded. However, since we are considering the commercial airlines, let us note first how the transportation industry as a whole has been subsidized and then turn our attention to the air carriers.

### Transportation Subsidies

Transportation has had long experience with Government aid. While George Washington was President, subsidies for canals and roads were voted by Congress, and later the Pony Express was supported by this means. From 1850 until 1871, railroads were granted land in the great undeveloped regions of the Midwest and the West, to aid in opening up that territory for settlement. Though about 131 million acres were so granted, the recipient companies represented only about eight percent of our present railway mileage. Also, this land was given with the attached condition that the grantee railroads would carry Government property and military personnel at half the public tariff rates, and mail at eighty percent of the rates received by non-grant railroads. These rate reductions continued until 1946 and, according to an estimate of the Association of American Railroads, returned to the Govern-

ment over ten times the land values at the time of the grants.

Shipping over our inland waterways has received and is receiving subsidies in large amounts. Findings of a Government agency investigating the subject indicate that in the 150 years from 1790 to 1940, total waterway expenditures for river and harbor improvements amounted to nearly \$3 billion. Unlike the railroad land grants, there are no offsets to this subsidy, and the users of the waterways (except for the Panama Canal) pay nothing for their privilege. Since the Army Corps of Engineers maintains some 190 harbors, 400 locks and dams, and 27,000 miles of improved channels, it can be seen why the annual sums spent in keeping the waterway system in operation are substantial.

Subsidies for ocean shipping are of a different nature and have the distinction of being called by their true name in the Merchant Marine Act of 1936. Prior to that year, steamship operators have been subsidized by authority granted the Postmaster-General in 1928 to make grants-in-aid to ocean shipping, without requiring the transportation of a single pound of mail. Eight years later a new act established the subsidy policy which is in effect today. Under it, the Federal Maritime Board is authorized and directed, when requested by a steamship operator, to make up any disadvantage which an American Flag company might suffer in competition with foreign operators. Since the latter are frequently able to offer lower rates because of lower construction and operating costs of their vessels, our shipping would be at a

disadvantage without the subsidies granted. But an adequate merchant marine is a "must" to us in time of war, and in addition assists the development of our foreign commerce during peacetime.

Commercial highway users, namely trucks and buses, have been and are being subsidized to the extent that the registration fees, toll charges, and fuel or special taxes paid to the governments providing the roads and highways do not cover the share of maintenance costs assignable to the commercial vehicle operators. According to a public aid study made eight years ago, these costs amounted to \$42 billion from 1921 to 1940. Much of the use made of highway facilities is by private automobiles and military traffic, a circumstance which complicates the problem of determining what portion of the highway costs should be borne by truckers and bus operators.

The subsidy given the motor carriers has spread beyond these direct beneficiaries to the automobile manufacturers, and the makers of automotive parts. (A similar result has followed the provision of cheap electric power by the Federal government, since electrical appliance companies have enjoyed the benefits of increased sales and profits.)

### Air Transportation Aid

Turning now to air transportation, we find that governmental aid has taken four forms: airways, airports, and other navigational facilities have been furnished; aeronautical research and development have been carried on; taxation concessions have been given; and air-mail payments have been made

far in excess of what could reasonably be considered as compensation for mail service alone.

Since 1926 the Federal government has furnished the domestic airlines with various airway aids, such as intermediate landing fields, lights, radio markers, weather reports, communication facilities, and recently, instrument landing systems and radar controls. These aids have been supplied at no cost to the users, which include private and military flyers as well as commercial pilots. Airports have been constructed and maintained by both the Federal and local governments, with only a portion of the costs assignable to the scheduled airlines covered by landing fees and other payments. It has been estimated that in the 16-year period from 1925 to 1941, the subsidy to the airlines from these sources costs about \$57 million.

Aeronautical research is conducted for the benefit of aviation in general and not for commercial air transport alone. While this class of user undoubtedly derives great value from the activities of the National Advisory Committee for Aeronautics, which carries on this research, it is impossible to measure the amount of these benefits in terms of dollars and cents.

Taxation concessions to air transportation have been granted by many states but not by the Federal government. Gasoline used by aircraft is either declared tax exempt or a partial or total tax refund is given the purchasers in several states having an aviation fuel tax. In some instances a third form of concession is given through taxing aircraft gasoline at a lower rate than that applying to other motor fuels.



It has been suggested that a special Federal tax be levied upon aviation gasoline in order that the users of airway facilities would make some contribution to the costs of construction and maintenance. If this policy should be adopted, it would seem only fair that the traffic which now has free use of our inland waterways should be required to make some payment toward the upkeep of the river and harbor facilities.

Last, but by no means least, our airlines have been subsidized through payments made by the Post Office Department. The air carriers have occupied a unique place in the field of transportation, since they are the only type which, by act of Congress, has been kept in business largely by mail pay. This policy of air-mail subsidy is almost entirely confined to our country although foreign airlines have received other forms of aid from their respective governments. These forms include government investment of capital, direct cash payments, provision of flying equipment and ground facilities, taxation exemptions, and training of personnel at government expense.

Aid to air transportation through mail pay had its origin some 20 years ago, when these payments were more than 80 percent of total airline revenues. (Today this proportion is less than six percent for the larger airlines.) At that time mail brought in about eight times what a passenger could pay on an equivalent weight comparison, and postal matter was also easier to handle. The planes in service were small though adequate to accommodate the few passengers willing to pay a high

price for the privilege of being uncomfortable.

This was the situation which prevailed when Postmaster-General Walter F. Brown took office in the cabinet of President Hoover. And Mr. Brown, being a man of vision, felt that some day a commercial air fleet could play an important part in the transportation industry. In Brown's estimation, the first step in hastening that day was to encourage the provision of large-scale passenger service by the predominantly mail carrying airlines.

As a means of achieving his ends, the Postmaster-General asked Congress to pass a law which radically changed the method of paying operators for mail service. Heretofore they had been paid according to the weight of mail carried, with additional payments for increased length of haul. But under the McNary-Watres Bill drafted by Mr. Brown and his staff, mail rates were made on the basis of the amount of airplane space reserved for mail on each flight by the Post Office Department whether or not there was any mail in that space.

These rates were set by competitive bidding among the airlines, the lowest responsible bidder for a particular route being awarded the mail contract. A maximum payment per mile flown was specified in the Act in order to set some limit on the Postmaster-General's authority.

Since the Post Office Department frequently made little or no actual utilization of the airplane space reserved, this unused capacity could be filled with passenger seats. Operators using large multiengined cabin planes and equipping them with two-way radios and

navigation aids were paid bonuses by the Department, thus augmenting the subsidy made possible through the space method of mail pay. By means of this method and the accompanying bonus payments, the Postmaster-General was able to aid indirectly aircraft builders, engine manufacturers, and radio makers. Such aid meant a good deal to these (then) infant industries.

This promotional program on the part of the Post Office Department was designed to make the airlines eventually independent of any mail subsidy. Operators using faster, safer, and more comfortable flying equipment than had previously been in service would increase their passenger revenues to a point where they would make the airlines self-supporting. So reasoned Postmaster-General Walter F. Brown who first conceived the idea of using mail pay as a subsidy medium. While his objective has been slow of realization, its attainment now appears possible for many of our domestic airlines.

Following the much-publicized cancellation of air-mail contracts by Brown's successor, James A. Farley, a new act was passed in 1934. The space method of payment was replaced by one in which mail mileage was paid for on the basis of an assumed minimum load. Thus every mail flight was considered as carrying 300 pounds of postal matter even though only a few birthday cards might actually form the contents of the mail pouch. While the Post Office Department no longer reserved airplane space, it did continue to pay for unused payload capacity.

In 1938, influenced by the airlines' spokesman who described the industry's

condition as "chaotic," Congress passed the Civil Aeronautics Act. This measure placed control over mail rates in the hands of a regulatory body created especially to handle matters pertaining to aviation. This agency became the Civil Aeronautics Board, which remains the regulatory agency for commercial and private aviation.

Under the Act, promotion of air transportation, which had been permissive by the Post Office Department, was made mandatory on the part of the Civil Aeronautics Board. Such a policy was stated, and a method prescribed for making it effective. This was accomplished by directing that the Board, in setting a mail rate, consider:

The need of each . . . air carrier for compensation for the transportation of mail sufficient to insure the performance of such service and together with all other revenue of the air carrier, to enable such air carrier under honest, economical and efficient management, to maintain and continue the development of air transportation to the extent and of the character and quality required for the commerce of the United States, the Postal Service and the national defense. (Sec. 406(b), *Civil Aeronautics Act of 1938*, 52 STAT. L. 973)

As may be noted, air transportation is considered of importance in three ways, two of which are the justification for the stated policy of subsidization. During World War II the airlines demonstrated their value to national defense by their contributions of trained personnel to the armed services and by their military contract work. In addition, regular commercial operations were conducted on a somewhat curtailed scale to fulfill the needs of essential civilian travel. It is hardly necessary to mention the peacetime services



of our airlines, for business and pleasure travel, or to emphasize that neither large-scale wartime nor peacetime operations would have been possible had not the Government given support to the industry through mail pay.

In its interpretation of the "need" clause quoted previously, the Board has fixed rates which cover the deficit between nonmail revenues and total costs, including a profit allowance and an allowance for Federal income taxes. Those costs are disregarded which the Board considers excessive or unrelated to the provision of the kind and quantity of air service contemplated by the Civil Aeronautics Act.

During most of the past 23 years, mail pay has been the lifeblood of the air transport industry. However, the four largest domestic carriers have built up their commercial traffic to such a volume and have reduced ton-mile costs so successfully that the Civil Aeronautics Board has prescribed a mail rate which contains no subsidy element and which represents only compensation for performing mail service. For most of the airlines, however, particularly those offering local service to small communities, mail pay is all that keeps them in business. Since many of these local carriers serve areas of low traffic potential, it is unlikely that this dependence will decrease significantly, if at all. Over half of their total revenues are represented by mail pay—more than eight times the corresponding proportion for the main domestic trunk lines.

The local service airlines are still in the experimental stage and it is too early to predict what their future will

be. Many of the communities they serve lack means of good transportation other than air and the public welfare may justify continued governmental support of these local service carriers. Likewise, isolated towns unimportant from a commercial standpoint may become sites of vital defense projects and may require quick and convenient means of travel for key personnel who transfer to and from one or more of the long-haul carriers at junction points.

Our international airlines also rely upon mail pay, about 19 percent of their revenue coming from that source in 1951. As is the case with local service airlines in this country, the commercial traffic potential of the international American Flag carriers is very low in many instances. Yet national security considerations may dictate that air service be maintained, for example, between the United States and a small town in the Near East close to a strategic military base. And in the world's present state of tension, it may well be that our international airlines will have to render such service for a long time to come. Since these carriers have to construct and maintain their own airway aids and airport facilities in many of the countries they serve, their operating costs are much higher than those of domestic airlines.

Although the mandate given the Civil Aeronautics Board by the Act indicates that subsidy is to be given needy airlines through mail pay, there is no clear indication of how subsidy is to be measured. As a result, there have been several means of determination proposed, one of which has achieved general acceptance. This method,



which has been adopted by the Board and two agencies that have studied the whole field of government aid to transportation, measures subsidy as the difference between the mail rate and the cost to the airline of rendering mail service, including an allowance for reasonable profit and, in the case of the Board, Federal income tax.

This subsidy measurement formula sounds easy to apply. And so it would be if the cost of carrying mail could be accurately determined. This difficulty would not be present if it were possible to assign a large proportion of costs directly to mail service. However, most of the mail is carried in planes which are also loaded with passengers, express, and often freight. Under these circumstances it is difficult to compute what portion of such joint costs as pilot's salaries and the cost of gasoline and oil should be apportioned to mail.

A study recently made by the Civil Aeronautics Board indicates that the mail cost, including an eight percent return on the carrier's investment used in mail service and an allowance for Federal income taxes, is now about 51 percent of the total mail payments received by the airlines. This leaves 49 percent of mail pay to be considered as subsidy, a proportion which is expected to decrease in the future. The percentages mentioned are for the domestic carriers as a whole; the largest airlines receive only seven percent subsidy pay, whereas the smaller ones are subsidized to the extent of nearly 95 percent of their mail revenue, according to the Board's findings.

In any event, the bill which passed the Senate and those pending in the

House direct the Civil Aeronautics Board to compute the airlines' cost of rendering mail service, and prescribe mail rates on that basis. Then if an airline is unable to operate profitably with the "service" rate fixed by the Board, the carrier may apply for a subsidy to make up the operating deficit. Thus, the separation will not in itself diminish the aid now required by air carriers, although other advantages will ensue.

Once subsidy is brought out into the open its determination will pose many problems. Among the most important of these is the question of justifying widely different amounts of subsidy payments among the carriers. Economic and social considerations dictate that the only defensible reason for such differentiation is the relative degree of public interest attached to the maintenance of a particular carrier or route. This problem is especially acute in the case of the local service or feeder lines and the international carriers, as noted earlier. It is apparent that legislative or administrative criteria, definite and practical of application, will have to be devised to measure the need for a given service based upon the requirements of our national defense and our domestic and foreign commerce.

A second problem will arise in connection with the distinction between the portion of need due to managerial inefficiency or lack of initiative. The problem will not be new since the Board now excludes from mail rates costs which it considers excessive or irrelevant, as mentioned in an earlier paragraph. However, as has been stated, mail rates for all air carriers except the "Big Four" contain, besides

compensatory mail pay, an element of subsidy representing the difference between commercial revenues and total operating costs including a profit and Federal income tax allowance. This intermingling of subsidy and compensatory mail pay renders it difficult to make such sharp comparisons of relative managerial efficiency as should be possible with a determination of subsidy only. It is true that the Board now makes an "administrative" separation but this merely shows what part of a mail rate is subsidy with no actual segregation. With nonmail costs brought into the open, distinct from those attributable to mail service, management will be under added pressure to justify such costs.

In looking back over two decades of mail subsidy, it may be said that in general the policy has been a wise one. It has enabled a rapid, convenient means of transportation to become well established, even though in some instances wasteful duplication of air services has been fostered. But even though we may feel that Government support of commercial aviation has been well justified, it is time we knew how much we are paying for that support. Airlines claiming a need for subsidy will have to prove that what they have to offer is necessary to our nation's well being. If it is necessary, we should not begrudge financial aid to maintain an important segment of our national economy.

# Natural Gas Conservation as a National Problem

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THE INDICATED LIFE of the proved recoverable natural-gas reserves in the United States on December 31, 1951, shown by the ratio of proved reserves to net production in 1951, was 24.3 years. At the end of 1950, the indicated life of the natural-gas reserves was 27 years, and five years earlier, before the postwar expansion of interstate pipe lines, it was 32.5 years. What is the economic significance of this decrease in the indicated life of natural-gas reserves to future consumers? It is proposed in this article to register a judgment as to the extent of the national interest in the conservation of natural gas.

## Future Supplies of Natural Gas

In the first place, the national interest in future supplies of natural gas depends upon the adequacy of reserves to meet future demands. The decrease in the indicated life of natural-gas reserves in recent years is due to a greater increase in the annual rate of net production than in proved reserves.<sup>1</sup> Net production of natural gas in 1951, as estimated by the American Gas Association, was 7.96 trillion cubic feet. This

represents a 15 percent increase over the estimated net production in 1950. Proved natural-gas reserves in the United States on December 31, 1951, as estimated by the American Gas Association, were 193.8 trillion cubic feet, an increase of only 4.4 percent over the estimated proved reserves as of December 31, 1950. The annual rate of net production increased 81 percent between 1946 and 1951, whereas proved reserves increased only about 21 percent.

Is the decrease in the ratio of reserves to the annual rate of net production a cause for concern about the future supplies of natural gas in this country? One writer sees no reason for concern as to the availability of natural gas to meet future demands as long as annual additions to reserves continue to exceed the amount of annual net production.<sup>2</sup> In 1951, 16 trillion cubic feet of natural gas were added to estimated proved reserves before deduction for 1951 net production. The additions were about twice net production. For the past five years, about two cubic feet of natural gas, on the average, have been added to known reserves for each cubic foot of gas

<sup>1</sup> Net production equals gross withdrawals less gas returned to producing reservoirs for pressure maintenance. It should be distinguished from marketed production which is the amount of production after deduction for losses and waste in production as well as quantities returned to producing reservoirs for pressure maintenance.

<sup>2</sup> L. F. Terry, "The Outlook for Natural Gas," *The Commercial and Financial Chronicle*, Vol. 174 (October 11, 1951), p. 1350. Mr. Terry is a petroleum and natural-gas engineer and a vice-president of the Chase National Bank.



produced. The aforementioned writer predicts that additions to reserves will continue to exceed production if producers are able to obtain a price for natural gas that is adequate to remunerate them for their costs and risks in exploring for new reserves. This optimism is founded upon a "guesstimate" of recoverable natural-gas reserves in the United States of 500 trillion cubic feet.<sup>3</sup> Included in this "guesstimate" are the proved reserves, estimated future discoveries in lands of the United States of 280 trillion cubic feet, and estimated future discoveries in the tidelands off the coast of Louisiana and Texas of 50 trillion cubic feet. The appraisal is based upon an estimate by Lewis G. Weeks, Senior Research Geologist for Standard Oil Company of New Jersey, of crude-oil reserves ultimately to be found in the continental United States, excluding tidelands, and an estimated ratio of natural-gas discoveries to oil discoveries of six thousand cubic feet of gas to one barrel of oil. (The ratio of gas to oil discoveries to date is 5.4 thousand cubic feet of gas to one barrel of oil.) Estimated *proved* reserves of natural gas in the tidelands

<sup>3</sup> L. F. Terry, "The Future Supply of Natural Gas," *American Gas Association Proceedings, 1950*, Vol. 32, p. 155. Newly discovered natural-gas reserves in the Canadian Province of Alberta are also available to meet demands for natural gas in the United States. E. L. DeGolyer, geologist and petroleum engineer, has estimated these reserves at 13.7 trillion cubic feet, of which 8.4 trillion cubic feet are immediately available for sale. The Alberta government has established a policy of permitting exports when the Provincial requirements of 4,500 billion cubic feet are provided for. See "Petroleum Industry's Profits at Peak," *The Commercial and Financial Chronicle*, Vol. 174 (December 13, 1951), p. 2267.

off the Louisiana coast were only 4 trillion cubic feet in 1949; no estimate had been made of *proved* reserves off the Texas Gulf coast.<sup>4</sup> It is evident that the figure of 500 trillion cubic feet is conjectural. The most important part of the future supply of natural gas consists of natural gas yet to be found.

Even if this "guesstimate" of recoverable reserves should be accepted as a basis for calculation of future supplies, is there justification for optimism concerning the availability of natural gas to meet future demands? In the past ten years, and more particularly in the past five years, there has been a rapid increase in the amount of natural gas marketed in the United States. The United States Bureau of Mines has released a preliminary estimate of marketed production in the United States for 1951 of approximately 7.4 trillion cubic feet. According to this estimate, the marketed production of 1951 exceeded that of 1950 by 18 percent, that of 1946 (the first post-World War II year) by 84 percent, and that of 1941 (the last pre-World War II year) by 164 percent. The increase of 84 percent in marketed production between 1946 and 1951 may be compared with an increase of 44 percent in the five-year period, 1941-46, an increase of 25 percent in the five-year period, 1936-41, and an increase of 23 percent in the five-year period, 1931-36. The marketed production of

<sup>4</sup> H. C. Cortes and R. N. Gsell, "Offshore Natural Gas and Oil Development," *American Gas Association Proceedings, 1949*, Vol. 31, p. 166. Twelve gas fields had been discovered in the Gulf off the Louisiana coast. The average total depth to which gas wells were drilled was 11,000 feet.

natural gas has practically doubled since 1944 and is over four times that of twenty years ago.

The growth of interstate shipments and exports to foreign countries has been more rapid in recent years than the growth in marketed production. Interstate shipments and exports of natural gas, as reported by the United States Bureau of Mines, amounted to 2.54 trillion cubic feet in 1950,<sup>5</sup> the last year for which data are available. They were 27 percent greater than in 1949, 130 percent greater than in 1945, and 244 percent greater than in 1940. The ratio of interstate shipments and exports to marketed production was 40 percent in 1950, compared with a ratio of approximately 28 percent in both 1945 and 1940. The increase in the annual rate of interstate shipments has accounted for a major part of the increase in the annual rate of marketed production since 1945.

Future prospects are for continued growth in interstate shipments and it appears that interstate pipe-line capacity will continue to grow at an enormous rate. Between February 7, 1942, and December 31, 1951, the Federal Power Commission authorized the construction of more than 43,800 miles of pipe line and 2,851,000 horsepower of compressor facilities at a total estimated cost of about \$3 billion. Nearly \$1 billion was spent in 1951 by natural-gas utilities for the construction of new transmission lines and the expansion of present pipe-line systems, and \$1.3 million has been allocated by natural-gas utilities and pipe-line com-

panies for expansion in 1952.<sup>6</sup> The American Gas Association estimates that nearly \$4.6 billion will be spent by the natural-gas industry for expansion in the five years from 1951 through 1955.<sup>7</sup> The Federal Power Commission stated in its last annual report to the Congress that "it would appear that the growth of the natural-gas industry has not yet begun to level off and there is no indication within the foreseeable future when such leveling off might occur."<sup>8</sup>

The demand for natural gas for domestic, commercial, and industrial uses greatly exceeds supply throughout markets in the northern United States. In August, 1951, the Petroleum Administration for Defense issued an order restricting natural-gas installations for heating new homes and for new industrial users in fifteen states in the northeastern and central parts of the country and in the District of Columbia because of the shortage of supplies of steel required to complete pipe lines. Present deliveries of natural gas to the Appalachian and Eastern seaboard areas of the United States touch only the surface of markets there.<sup>9</sup> Natural gas reached New England markets for the first time in 1951. It has been estimated by one writer that the domestic and commercial demand for natural gas in the northeastern

<sup>5</sup> G. F. Mitchell, "Gas Industry at New High in '51," *American Gas Association Monthly*, Vol. 34 (January, 1952), p. 3.

<sup>7</sup> *Ibid.*

<sup>8</sup> *Thirty-first Annual Report of the Federal Power Commission, 1951* (Washington: Government Printing Office, 1952), p. 77.

<sup>9</sup> See statement by R. H. Hargrove, President of Texas Eastern Transmission Corporation, in *Public Utilities Fortnightly*, Vol. 48 (October 25, 1951), p. 597.

<sup>5</sup> Exports to Mexico amounted to 22.5 million cubic feet and exports to Canada to 3.17 million cubic feet.

region of the United States in 1950 was more than twice the ultimate combined transmission capacity, at the maximum load factor attainable, of the three principal pipe-line systems transporting natural gas to that region from Texas.<sup>10</sup> In view of the large unfulfilled demands and the policy of the Federal Power Commission to authorize the construction of transmission facilities to meet these demands, it does not seem unreasonable to suggest that consumption of natural gas in interstate markets may increase as much in the next five years as in the past five.

If the net production of natural gas should increase in the five years subsequent to 1951 at the same rate as in the five years prior to that year, it would amount to about 13 trillion cubic feet in 1956. It has been suggested that annual net production may readily attain 15 trillion cubic feet by 1960.<sup>11</sup> If this annual rate of production by 1960 should be taken as a basis for calculation of the life of the potential recoverable reserves of natural gas in the United States, and these reserves are assumed to be 450 trillion cubic feet by 1960 (the previously mentioned "guesstimate" for 1950 was 510 trillion cubic feet), the reserves would last until about 1990. If the annual rate of production should grow beyond 15 trillion

cubic feet, natural-gas reserves, as envisaged, would be exhausted before that time. Thus, even though a highly optimistic estimate of undiscovered reserves is taken as a basis of calculations, the life of recoverable reserves is relatively short.

It appears that the annual additions to proved reserves of natural gas may not continue to grow in the future as in the past. The business of producing natural gas is predominantly a part of the petroleum industry and the discovery of natural gas is largely a result of the search for oil. It was revealed in the natural-gas investigation completed by the Federal Power Commission in 1948 that in the six-year period subsequent to 1938 only six or seven large oil and gas pools were discovered, whereas twenty-two large bonanza-type fields were discovered during the previous six years.<sup>12</sup> A prominent geologist and petroleum engineer testified in 1946 before a special United States Senate committee investigating petroleum resources that the rate of discovery of petroleum reserves had fallen off since 1938, even though exploration activities of the highest degree of technical excellence were at an all-time high during that period.<sup>13</sup> It is significant that of the 16 trillion cubic feet of additions to natural-gas reserves in 1951, only 3 trillion cubic feet were accounted for by discoveries of new natural-gas fields and new pools in old fields; the remainder of the additions resulted from revisions of previous esti-

<sup>10</sup> C. R. Breck "Pipe Line Gas from Coal Is Needed to Meet Northeast Deficiencies," *Gas Age*, Vol. 109 (March 27, 1952), p. 40. The pipe-line systems are Tennessee Gas Transmission Company, Texas Eastern Transmission Corporation and Transcontinental Pipe Line Corporation.

<sup>11</sup> L. F. Terry, "Natural Gas Supply and Federal Regulation," *The Commercial and Financial Chronicle*, Vol. 175 (April 17, 1952), p. 1609, and *Public Utilities Fortnightly*, Vol. 50 (July 3, 1952), p. 11.

<sup>12</sup> Federal Power Commission, *Natural Gas Investigation, Smith-Wimberly Report, 1948* (Washington: Government Printing Office, 1948), p. 52.

<sup>13</sup> E. L. DeGolyer. See *ibid.*, p. 50.



mates for existing fields. To find oil and gas in the future will require greater efforts than in the past and increasing costs per barrel and per thousand cubic feet. Wells will have to be drilled deeper and exploration will have to be conducted in prospective areas located far from existing gathering and transmission lines. Consequently, natural-gas reserves acquired in the future by interstate pipe-line companies will be more expensive than those acquired in the past.

Even though the present annual rate of additions to reserves is continued, there is not likely to be as much natural gas available in the future as in the past to support new interstate pipe-line projects. The Federal Power Commission requires that proposed new pipe-line projects be supported by proved reserves of natural gas for approximately twenty years of service before it will issue certificates of public convenience and necessity for new construction. Pipe-line companies must have enough reserves in support of a pipe-line project to meet the requirement of insurance companies and other large purchasers of pipe-line bonds that sinking funds be accumulated to retire the bonds. If one multiplies the estimated marketed production in 1951 by twenty, the multiplier of annual load requirements employed by the Federal Power Commission to establish the amount of natural-gas reserves required to justify new long-distance pipe-line projects, one sees that proved reserves of 148 trillion cubic feet are indicated as necessary or desirable to support the 1951 rate of marketed production and that only about 45.8 trillion cubic feet of proved reserves

(193.8 trillion cubic feet of proved reserves as of December 31, 1951, less 148 trillion cubic feet) remain as available reserves for support of future increases in marketed production. As natural-gas reserves become more scarce, oil companies are increasingly reluctant to commit their reserves to interstate pipe-line service and charge pipe-line companies increasingly higher prices for supplies needed for expansion of pipe-line capacity.

Furthermore, available future supplies of natural gas may begin to decrease before reserves are depleted because of physical limitations on the withdrawal of oil and gas from underground reservoirs. When natural gas is associated with oil, it is necessary that the pressure of the reservoir be maintained for the greatest economical recovery of oil through restriction of the rate of withdrawal of natural gas or through restoration of gas to the reservoir in pressure maintenance and repressuring operations. Also, a natural-gas reservoir may lose its ability to furnish gas to meet peak loads and to provide dependable supplies of gas for high-capacity operations of pipe lines long before its reserves of natural gas are exhausted.

The rapid expansion of the petrochemical industry in the Southwest utilizing natural gas as a raw material and as a fuel may cause a substantial decrease in the amount of natural gas available for shipment to markets in other states. According to a report of the Oil and Natural-Gas Securities Committee of the Investment Bankers Association, petrochemical plants located in the Gulf region of Louisiana and Texas represented an investment

of \$750 million at the end of 1950, as compared with an investment of only about \$65 million before World War II. An investment of \$1 billion by the end of 1951 was forecast. It has been estimated that 68 percent of the increase in industrial consumption of natural gas in the United States in the five-year period, 1945-50, can be attributed to the growth in the petrochemical industry.<sup>14</sup>

As existing petroleum reserves diminish and new reserves become more difficult to find, oil companies may turn to natural gas as a source of liquid fuels as well as a source of chemical products. Natural gas is already being converted synthetically into gasoline, Diesel oil, and alcohol on a commercial scale at a plant owned by Carthage Hydrocol, Inc., in Brownsville, Texas. One technical authority has estimated that thirty plants, involving an investment of \$30 million each, located in the natural-gas producing fields of the Southwest could produce synthetically as much as 5 percent of the production of oil fields in 1947.<sup>15</sup> Thus, industrial developments in the Southwest may greatly lessen the availability of natural-gas reserves for support of additional interstate pipe-line capacity.

The apparent insufficiency of future

supplies of natural gas to meet future demands, and particularly future demands in markets served by interstate pipe lines, causes the matter of conservation of natural gas to be of important national concern.

### Physical Waste of Natural Gas in Production

In view of the rapidly increasing scarcity of natural gas, physical waste in production is a major concern. Of the gross production of 8.5 trillion cubic feet in 1950, about .8 trillion cubic feet, or over 9 percent, was vented and wasted in production, according to a report by the United States Bureau of Mines. (This information is incomplete since much of the gas flared in oil fields is not reported and since it does not include the underground waste of gas and oil caused by inefficient production practices.)

The data show that the physical waste of natural gas has decreased in recent years. Almost 16 percent of the gross production was wasted in 1947, when wastage was at a peak. The physical waste in production in 1950 was about 7 percent less than in 1949 and 25 percent less than in 1947.

The current physical wastage consists almost entirely of gas produced in conjunction with oil, known as casing-head gas. The flaring of dry gas from gas wells has been largely stopped through conservation regulations by natural-gas producing states. The production of casinghead gas is geared to the production of oil (since it is generally impossible to produce a barrel of oil without producing at least the quantity of gas that is dissolved in the oil),

<sup>14</sup> Industrial consumption in the six principal natural-gas producing states of the Southwest together with California represented 73 percent of the industrial consumption in the United States in 1950. Industrial consumption in these states in 1950 was 12 percent greater than in 1949 and 36 percent greater than in 1945.

<sup>15</sup> Professor J. H. Ruston, director of chemical engineering, Illinois Institute of Technology. See "Liquid Fuels from Natural Gas," *American Gas Journal*, Vol. 168 (March, 1948), p. 38.

and cannot be varied to meet fluctuations in market demands. The wastage of this gas is due primarily to the lack of pipe-line facilities for gathering and marketing the gas. However, increased demands for natural gas have made it economically feasible to gather, process, and market most of the casinghead gas.

The producing states have intensified their efforts to reduce the physical waste of gas in the production of oil. The Texas Railroad Commission has required the shutting down of oil fields to stop avoidable waste of gas. The legality of this action was upheld by the Texas Supreme Court. The Chairman of the Texas Railroad Commission sees a trend in producing states to reduce the waste of casinghead gas through regulatory requirements that purchasers of natural gas give first consideration to affording a market to casinghead gas that otherwise would be flared.<sup>16</sup> Producing states may require that interstate pipe-line companies become "common purchasers" and purchase gas ratably from all producers in a reservoir for the conservation of supplies and the protection of the property rights of the co-owners of the reservoir.<sup>17</sup> The Federal Power Commission recommended to the Congress in 1948, after completing its investigation of the natural gas industry, that the Federal government should not interfere with state efforts to prevent the physical waste of natural gas in production, since the states had made substantial

progress in dealing with the problem of conservation and the varied requirements of changing local situations could be met best by state conservation authorities.

### Utilization of Natural Gas

The growing scarcity of natural gas enhances the national interest in its utilization for the realization of maximum economic and social benefits. These benefits are greatest when it is utilized for domestic purposes. Natural gas is especially valuable for use as a fuel in household cooking and water heating because of its qualities of cleanliness and ease of handling and control. The same qualities make it especially valuable for space heating and air-conditioning of homes, refrigeration, and other domestic uses. Because of the increase in the retail cost of coal and fuel oil for domestic uses relative to the retail cost of natural gas, these alternate fuels no longer have a great competitive cost advantage over natural gas in domestic uses. Inasmuch as natural gas has no close substitute in the chief household uses, the conservation of its supply for these uses is of great importance.

The so-called commercial uses are also important, e.g., space heating of buildings used for wholesale and retail trade, commercial storage, office, hotel, theater, and other commercial purposes; and the cooking and refrigeration of food in restaurants.

When natural gas is used industrially, it is most valuable in uses for which it has special qualifications, such as space heating of buildings, metallurgical and ceramic heat-processing operations, and as a raw material for

<sup>16</sup> W. J. Murray, Jr., "Natural Gas Problems in the Territory of Greatest Reserves," *American Gas Journal*, Vol. 170 (June, 1949), p. 15.

<sup>17</sup> *Cities Service Gas Company v. Peerless Oil and Gas Company* 340 U. S. 179 (1950).



the manufacture of chemical products. At the same time, much of the industrial consumption is induced by the cheapness of natural gas relative to alternate fuels rather than by its special qualities.<sup>18</sup> Natural gas is selected with primary regard to its cheapness when it is used as a steam-boiler fuel in electric-utility and manufacturing plants and as a fuel in heat-processing operations of petroleum refineries, Portland cement plants, and certain other types of industrial plants.

When natural gas is consumed in uses for which coal and other energy sources are suited, its importance depends upon whether or not it is being utilized in parts of the country where coal or water power is readily available. The use of natural gas in domestic, commercial, and certain special industrial uses for which alternate energy sources are not suited is economically justifiable in all parts of the country, including those parts where coal or water power is easily obtainable. The use of natural gas for industrial boiler-fuel purposes also is justifiable in producing areas where coal or water power is not readily available. However, in view of the prospective shortage of supplies of natural gas for meeting the demands of future domes-

tic, commercial, and high-grade industrial users, there is little economic justification for the use of natural gas for industrial boiler-fuel purposes where coal is easily obtained.

Of the marketed production of natural gas in the United States in 1950, about 6.03 trillion cubic feet were utilized; the remainder was stored or lost in transmission. Data of the United States Bureau of Mines show 1950 consumption and average value at points of consumption in various classes of use as follows:

	Trillions of cubic feet	Percent of total	Average value per thousand cubic feet (cents)
Domestic. . . . .	1.2	20	68.5
Commercial. . .	.39	6	47.4
Industrial:			
Oil- and gas- field oper- ations	1.19	20	6.1
Petroleum re- fining. . .	.45	7	15.9
All other in- dustrial uses. . . .	2.8	47	
Total. . . . .	6.03	100	

The total value at points of consumption of the 6.03 trillion cubic feet consumed was approximately \$1.6 billion. Domestic and commercial consumption accounted for about 26 percent of the volume and 62 percent of the value of natural gas consumed, whereas industrial consumption accounted for about 74 percent of the volume and 38 percent of the value. Thus, the data show that industrial consumption accounts for the major part of the drainage upon our natural-gas reserves in all uses but accounts for a minor part of the total value of the natural gas utilized.

Data are not available for complete

<sup>18</sup> In 1939, natural gas was 29 percent more expensive than fuel oil and 70 percent more expensive than coal in the territory served by the Panhandle Eastern Pipe Line Company (in Missouri, Illinois, Indiana, Ohio, and Michigan). The rising wholesale price of fuel oil met the falling price of natural gas for industrial uses in 1942 and, similarly, the wholesale price of coal was equivalent to the price of natural gas for industrial uses late in 1943. L. J. Zitnick, "The March of the Gas Transmission Lines," *Public Utilities Fortnightly*, Vol. 45 (April 13, 1950), p. 484.

classification by uses of the 2.8 trillion cubic feet of "all other industrial uses" in 1950. However, approximately .63 trillion cubic feet, or about 22 percent of "all other industrial uses," was used as boiler fuel at electric-utility plants.<sup>19</sup> This usage by electric-utility plants accounted for about 14 percent of the total industrial consumption of natural gas. A substantial proportion of industrial usage is for the production of carbon black; about 11 percent was so utilized in 1949. At that time, the average value of natural gas used for this purpose was only 4.8 cents per thousand cubic feet. A survey conducted by the Federal Power Commission of industrial consumption in 1945 in plants consuming 50 million cubic feet or more showed the following percentage distribution among various types of uses and the average price per thousand cubic feet in each type of use:<sup>20</sup>

	Percent of total	Average value per thousand cubic feet (cents)
Boiler fuel:		
Electric utility.....	26.0	10.65
Other.....	31.6	10.58
Heat treatment and processing.....	34.6	19.47
Gas engine fuel:		
Electric utility.....	3.1	13.08
Other.....	.2	11.00
Chemical raw material	1.6	17.50
Space heating.....	.8	25.82
All other.....	2.1	8.39
	100.0	

The manufacture of Portland cement, a relatively low-value heat-processing

use, constituted about 2.2 percent of total industrial consumption in 1949. These facts indicate that over three-fourths of the natural gas consumed in industrial uses is for oil- and gas-field operations, petroleum refining, carbon black production, cement manufacture, and boiler-fuel and gas-engine fuel purposes, all of which are low-value uses compared with domestic, commercial, and high-grade industrial uses.

Much of the consumption of natural gas in relatively low-value industrial uses in the producing states is economically justified, since coal is not readily available as a substitute fuel. In 1950, California and the six principal producing states of the Southwest (Texas, Louisiana, Arkansas, Kansas, Oklahoma, and New Mexico) accounted for 93 percent of the natural gas used in oil- and gas-field operations, 95 percent of that used as a fuel at petroleum refineries, and 60 percent of the remaining industrial consumption. These seven states accounted for about 65 percent of the natural gas used as boiler fuel at electric-utility plants in 1950 and for all of that used in carbon black production in 1949. Of the natural gas used in the manufacture of Portland cement, Texas, California, and Kansas accounted for 55 percent. The Federal Power Commission survey of industrial consumption in 1945 showed that the six principal Southwestern producing states together with California and Arizona accounted for 80 percent of the natural gas used as boiler fuel and 47 percent of that used in heat treatment and processing operations.

<sup>19</sup> The gas consumed by electric-utility plants includes gas other than natural which could not be segregated statistically.

<sup>20</sup> Federal Power Commission, *Smith-Wimberly Report*, p. 381. The survey covered 72 percent of all industrial consumption except field usage and carbon black production.

It does not appear that the national interest in the conservation of natural gas justifies regulatory action by the Federal government to restrict consumption in producing states. In general, natural gas is the only fuel readily available for oil- and gas-field operations. Carbon black production represents a technically inefficient utilization of gas, but consumption for this purpose is declining. (It decreased 11 percent in 1949.) Most of the natural-gas producing states restrict its use in carbon black production as a conservation measure. Electric-utility plants, petroleum refineries, and Portland cement plants consuming large quantities of natural gas in the Southwest and California were located in producing areas predominantly because of factors other than the cheapness of natural gas as a fuel. Utilization of natural gas in the Southwest in manufacturing and petrochemical plants appears essential to a well-balanced industrial development of this region.<sup>21</sup> The problem of low-grade industrial consumption in producing states seems to call for further regulatory action by those states and the development of industrial markets based on high-grade industrial uses.

However, the shipment of natural gas from producing states of the Southwest to coal-producing areas of the country for consumption in industrial uses that can be supplied by coal seems to require regulatory action by the Federal government in the interest of conservation. The proved reserves

of coal and lignite in the United States were estimated by the United States Geological Survey at about 3.2 trillion tons as of 1937, enough to last 2,600 years at current annual rates of production. Natural gas and petroleum constituted only four-tenths of one percent of the nation's proved recoverable mineral-fuel reserves as of January 1, 1946. Yet in 1950, they were drawn on for 19 percent and 35 percent, respectively, of the nation's energy consumption. The five southwestern states of Texas, Louisiana, Arkansas, Kansas, and Oklahoma possessed only about 4.2 percent of the nation's coal and lignite reserves as of 1937 and accounted for only about 1.3 percent of the nation's coal and lignite production in 1945. But at the end of 1945 they possessed about 84 percent of the nation's proved natural-gas reserves. In 1950, these states were the source of 2.14 trillion cubic feet of natural gas delivered by pipe line to markets in other states and in Mexico and Canada — 84 percent of all interstate shipments and exports.

The ten northern states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, New York, Ohio, Pennsylvania, and West Virginia imported approximately 1.2 trillion cubic feet of natural gas from the five principal producing states of the Southwest in 1950. The natural gas imported by these ten states from the Southwest constituted 83 percent of their total consumption and about 20 percent of the total consumption in the nation in 1950. Yet these same states possessed about 29 percent of the nation's total coal and lignite reserves in 1936 and accounted for about 83 percent of the

<sup>21</sup> See Federal Power Commission, *Natural Gas Investigation, Olds-Draper Report, 1948* (Washington: Government Printing Office, 1948), pp. 33-49.



nation's total production of coal and lignite in 1945. These facts give cause for the question: Is our natural-gas pipe-line system being employed literally in carrying coals to Newcastle?

To the extent that natural gas is being transported from the Southwest to parts of the country where coal is readily available for industrial uses that can be supplied by coal, it is evident that we are not making the most economical use of our natural-gas resources (except for the marketing of casinghead gas that otherwise would be flared). Industrial consumption of natural gas, excluding that used in field operations, constituted 48 percent of total consumption in 1950 in the ten northern states mentioned earlier, whereas domestic use and commercial consumption constituted 43 percent and 9 percent, respectively. The Federal Power Commission's survey of industrial consumption for 1945 by plants using 50 million cubic feet or more showed that of the industrial consumption surveyed in these ten northern states (the survey did not include field use, and there was no carbon black production in these states), about 24 percent was used for industrial boiler-fuel purposes and about 70 percent for heat treatment and processing. In the Midwestern states of Illinois, Indiana, Iowa, Michigan, Minnesota, and Missouri, 40 percent of the total industrial consumption, excluding field use, was for boiler-fuel purposes and 48 percent was for use in heat treatment and processing. Of the industrial usage covered by this survey, excluding natural gas consumed for carbon black production,

petroleum refining, cement manufacture, and by electric utilities, 60 percent was consumed by three industry classifications, namely, chemical and allied products, iron and steel and their products, and stone, clay, and glass. Boiler-fuel usage and much of the usage in heat treatment and processing depend upon the cheapness of natural gas relative to alternate fuels. Pipe-line companies generally follow the practice of selling large volumes as a boiler fuel on an interruptible basis at special low rates. These facts indicate that pipe-line companies are transporting large quantities of natural gas to northern markets to be squandered in uses that can be readily supplied by coal. Similarly, natural gas is being wasted in other regions of the United States, particularly in the Southeast.<sup>22</sup>

Representatives of pipe-line companies have contended that so-called interruptible and off-peak sales of natural gas at special low rates are required for pipe-line systems to operate at the high load factors<sup>23</sup> essential if domestic and commercial customers are to be served at reasonable cost.<sup>24</sup> An executive of Peoples Gas Light and

<sup>22</sup> The Federal Power Commission's survey showed that 78 percent of the reported industrial consumption in the states of Alabama, Florida, Georgia, Mississippi, and Tennessee was for boiler-fuel purposes.

<sup>23</sup> Load factor is the ratio of the average daily demand to the maximum daily demand.

<sup>24</sup> Brief and recommendations of the Natural Gas Industry Committee, October 15, 1946, filed with the Federal Power Commission in the natural gas investigation conducted by the Commission. Federal Power Commission, *Smith-Wimberly Report*, p. 258.

Coke Company of Chicago<sup>25</sup> has declared that interruptible and off-peak sales of natural gas currently afford the only solution to the problem his company must meet of providing service to space-heating customers in the Chicago area under conditions of a low operating load factor—resulting from a large space-heating load<sup>26</sup>—and low rates charged for space-heating service. But a study of the economics of long-distance pipe-line transportation of natural gas conducted by the Federal Power Commission indicates that pipe-line companies have placed a mistaken emphasis upon load factor in marketing natural gas.<sup>27</sup> High load factor is not as important a consideration in the cost of transportation by modern large-diameter pipe lines as it was in the cost of transportation by obsolete small-diameter pipe lines. Also, load factor is not as important a cost determinant in operations above 60 percent load factor as in operations below this load factor. Furthermore, many pipe-line companies may be better off financially to operate at a lower load factor and to convert much of the interruptible industrial service to firm-industrial service, which is more remunerative. The problem of

low load factor resulting from a space-heating load may be met more advantageously with underground storage of natural gas near markets than with an interruptible load. (The amount of gas stored underground has increased greatly in recent years. There are now over one hundred underground-storage fields in operation near markets. There were 474 billion cubic feet in underground storage on December 31, 1951, an increase of 132.7 billion cubic feet over underground storage at the end of 1950.) However, as the situation now stands, the wasteful use of natural gas in interruptible sales places a heavy economic burden upon future domestic, commercial, and high-grade industrial users.

### Prospects for Production of a Substitute for Natural Gas

Developments in the technology of producing gas of high heat content from coal<sup>28</sup> may cause the use of natural gas to be economically unwarranted for all fuel purposes in markets where coal is readily available and where natural gas can be made available only by long-distance transportation. One technical authority has stated that natural gas cannot be regarded as an irreplaceable resource either technically or economically; that both natural gas and oil can be re-

<sup>25</sup> J. F. Oates, Jr., "Leveling Hills and Valleys Is in the Public Interest," *American Gas Association Proceedings*, 1950, Vol. 32, p. 49. Peoples Gas Light and Coke Company recently has formed a subsidiary to acquire storage fields near Kankakee, Illinois, for the storage of 90 billion cubic feet of gas, about equal to its total gas sendout in 1950.

<sup>26</sup> Consumers of space-heating gas in the Chicago area provide only a 25 percent annual load factor.

<sup>27</sup> Federal Power Commission, *Smith-Wimberly Report*, pp. 258-273.

<sup>28</sup> Natural gas has a calorific value of about 1,000 B.t.u. per cubic foot. Carbureted water gas, which is the principal type of gas now manufactured from coal and distributed by manufactured-gas utilities, has a calorific value of about 530-540 B.t.u. per cubic foot. It is not a satisfactory substitute for natural gas because of its low heat content and high cost of production relative to natural gas.

placed by synthesis of these products from coal.<sup>29</sup> Both gas and oil can be produced synthetically from coal by the Bergius and Fischer-Tropsch hydrogenation processes which were used during World War II in Germany for production of liquid fuels to supply the mechanized German army. The technology of oil and gas synthesis has been improved in this country. The United States Bureau of Mines and the major oil companies are engaged in synthetic liquid-fuels research and development. In 1946, P. C. Keith, engineer and president of Hydrocarbon Research, Inc., of New York, estimated that gas with a high calorific value of 900-950 B.t.u. per cubic foot and with a thermal efficiency of over 80 percent could be produced in Pittsburgh or West Virginia from high-grade bituminous coal and transported by pipe line to New York City to sell in competition with other forms of fuel, including natural gas.<sup>30</sup> Experimental projects for the joint synthesis of gas and oil from coal have been undertaken in the United States. Research engineers of the Bureau of Mines foresee the development of a synthetic liquid-fuels industry manufacturing gas of high B.t.u. content as a by-product of the processing of oil. The industry would supply about 8 million barrels of oil and 5.5 billion cubic feet

of high B.t.u. gas per day.<sup>31</sup> Producing plants utilizing coals of West Virginia, Kentucky, and Pennsylvania could be located within a moderate distance of existing natural-gas transmission lines. For example, a plant utilizing coal of southern Illinois might be located close to the pipe line of the Texas Illinois Natural Gas Pipeline Company. Coal gas would provide a source of supply for a major part of the future demand for pipe-line gas in the northern states.

The estimated cost of producing this gas is somewhat higher than the present cost of natural gas in most northern markets, but it is believed that in the future when synthetic fuels would be produced in large quantity the cost of coal gas would be appreciably below the price that natural gas would command. Technical developments in the mining of coal may lower the cost of gas produced from coal. Underground gasification of coal is a possibility. *Fortune* editors foresee a "fuel revolution" resulting from technological advancements in the utilization and production of coal.<sup>32</sup>

The prospect of producing gas from coal as a substitute for natural gas in markets located in coal-producing areas of the country increases the national interest in the preservation of natural-gas reserves for use in natural-gas producing areas which are not favorably situated with regard to coal. Plans already have been made by the

<sup>29</sup> Testimony of W. K. Lewis, professor of chemical engineering, Massachusetts Institute of Technology, at the Natural Gas Investigation conducted by the Federal Power Commission. *Smith-Wimberly Report*, p. 453.

<sup>30</sup> P. C. Keith, "Synthetic Fuels Promise to Bolster Petroleum Reserves," *Chemical Engineering*, Vol. 53 (December, 1946), p. 101.

<sup>31</sup> F. L. Symonds, P. W. Laughrey, L. C. Skinner, H. R. Batchelder, and E. E. Donath, "Public Utility Gas as a By-Product of Synthetic Liquid Fuels," *American Gas Association Proceedings*, 1949, Vol. 31, p. 789.

<sup>32</sup> "Coal III — The Fuel Revolution," *Fortune*, Vol. 35 (April, 1947), p. 99.



Department of the Interior for Federal aid to private industry in establishing two huge plants for the manufacture of liquid fuels from coal and shale.<sup>33</sup> If a program is undertaken in the near future to develop a source of high B.t.u. gas from coal to supply a large part of the demand for natural gas in northern markets, the economic waste of transporting natural gas from the Southwest to the North to meet demands in the short-term future and of transporting coal gas from the North to the Southwest at a future date when natural-gas reserves are largely depleted might be avoided.

### Summary and Conclusions

The great economic and social benefits to be derived from the utilization of natural gas in domestic, commercial, and special industrial uses and the relatively short life of the nation's proved reserves of natural gas at the present rate of net production cause conservation of natural-gas supplies to be a matter of important national concern. Even if the most optimistic estimate of undiscovered reserves is taken into account in calculating future supplies, it ap-

pears that the nation's natural-gas reserves will be depleted within the lifetime of many people living today. Before reserves are exhausted, natural gas will cease to be available for meeting *additional* demands in interstate markets served by long-distance pipe lines. In spite of the impending exhaustion of reserves, large quantities of natural gas are being dissipated in uses that can be readily supplied by coal. Such wasteful usage of natural gas occurs when it is shipped from the Southwest to parts of the country where coal is easily obtainable for consumption in low-value industrial uses. Much of the industrial consumption of natural gas in the Southwest is economically justifiable because coal is not readily available. It appears that the wasteful consumption of natural gas in producing states in carbon black production and other low-grade industrial uses can be controlled best by these states. Also, the physical waste of natural gas in production can be controlled best by the producing states.

The shipment of natural gas from producing states to markets in states where coal is readily available for consumption in industrial uses which can be supplied by coal constitutes a conservation problem requiring a national regulatory solution. The Natural Gas Act does not provide for a solution of this problem. The Congress should enact legislation making it mandatory that the Federal Power Commission, or other appropriate Federal agency, formulate a long-range plan for the most economic utilization of the nation's reserves of natural gas. Consideration should be given in the formu-

<sup>33</sup> Secretary of the Interior Oscar L. Chapman has asked the Defense Production Administration to allocate "borrowing power" to him under the Defense Production Act to obtain funds to cover the interim losses of two new plants until they go into regular operation. Plans have already been announced by a New York company for construction of a \$400 million plant in southern Illinois for the manufacturing of liquid fuels from coal if the Government grants assistance in the form of a guaranteed minimum price for gasoline, chemicals, and other products. "Synthetic Fuel Plant Sought by Interior," *Public Utilities Fortnightly*, Vol. 48 (October 25, 1951), p. 599.

lation of such a plan to the needs of the Southwest for natural gas for future industrial development and to the prospects for synthetic production of a substitute for natural gas from coal in coal-producing regions of the

country. The plan could be put into effect by the enactment of legislation requiring the Federal Power Commission to regulate the end uses of natural gas transported in interstate commerce.

# Occupation and Credit Risk: The Occupational Credit Pattern

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DURING the last few decades there has been increased interest in research and specialization in the area of retail credit. This tendency is explained by the recognition of the significant economic role which retail credit plays in our everyday life, and the realization by retail merchants that credit is an additional factor assisting sales.

No one individual or group is responsible for the changes and improvements in the organization of retail credit. Some of the major colleges and universities contributed when, a few decades ago, they added courses in credits and collections, small business finance, and mercantile credit to their curricula. The efforts of the Associated Credit Bureaus of America since 1906, the National Retail Credit Association since 1912, the Federal Reserve System, and the credit divisions within trade associations and chambers of commerce have substantially contributed to the clarification of the role of credit in our economy and the education of credit men and women.

## Credit Ratings of Individual Occupations

An interesting, yet rather controversial, bit of retail credit research takes the form of studying occupations and arriving at credit standings related thereto. There have been few attempts to gain such objective credit ratings.

This may be attributed to the fact that there is more of a lay interest in this type of study, since people in the field feel that occupation alone does not provide a rational basis for the evaluation of a credit risk. This point is discussed in more detail in the final section of this article.

The study of occupational credit standings dates from 1931 when Professor P. D. Converse, a pioneer in the science of marketing, first made such an analysis. In 1941 he repeated the survey, increasing the size of the sample and the number of occupations studied.<sup>1</sup>

Because of widespread interest in Professor Converse's 1941 study and requests for a similar analysis since World War II, a repeat of the earlier studies was undertaken in 1951. The present study was conducted with the cooperation of the Associated Credit Bureaus of America and with the aid of the Bureau of Economic and Business Research.

The list of occupations to be rated was drawn from the *Dictionary of Occupational Titles*, prepared by the

<sup>1</sup> P. D. Converse, "The Occupational Credit Pattern," *Opinion and Comment*, August 12, 1941, pp. 1-9. The 1941 study was made by the Associated Credit Bureaus of America, the Credit Management Division of the National Retail Dry Goods Association, and the Bureau of Business Research (now the Bureau of Economic and Business Research), College of Commerce, University of Illinois.



United States Department of Labor. This was done to utilize standard titles of the listed occupations. Forty-two occupations were selected to be surveyed, representing professional, managerial, clerical and sales, service, agricultural, skilled, semiskilled, and unskilled groups. The occupations were to be rated by local credit bureau managers and retail store credit managers. Inasmuch as each respondent was to grade the various occupations as good, fair, or poor, measures were necessary to insure that the grading be objective. Hence, respondents were requested to define good, fair, and poor credit risks in terms of percent of defaults. The definitions obtained in this manner were applied in rating the various occupations.

A sufficient number of credit bureau managers and retail store credit managers replied to this query so that the aggregate of their responses defined good as 8 percent default, fair as 25 percent default, and poor as 50 percent or more default. In other words, the credit rating for any particular occupation was obtained by weighting the number of people rating that occupation as good, fair, or poor by 92, 75, and 50, respectively — the complements of the *average default percentages*. The percentage ratings in Table I applicable to the various occupations were calculated according to this method.

The findings of the 1951 study of occupations and credit standings are presented in Table I. The tabulations are based on 104 reports from credit bureaus and 101 from stores active in retail credit trade. Of the total number of credit bureaus and stores surveyed,

completed forms were received from 21 percent. The credit bureaus responded better than did stores, since 29 percent of the credit bureaus surveyed returned a completed report.

It will be noted that Table I has been divided after the twenty-first occupation, so that an equal number of occupational groups appear in each section. There are certain characteristics which seem to prevail among the higher-rated occupations, which consist largely of professional, clerical, and highly skilled manual workers. Stability of income and better utilization of income are characteristics which are generally apparent among these occupations. These are important factors in the business of extending retail credit. Although there are exceptions among all occupations, the sense of responsibility which an occupational group may have will substantially affect their paying habits. This fact may be attributed to the kind and amount of education or training which is necessary to perform these better-rated jobs. Some of the training may be of an informal nature and gained over years of experience; on the other hand, many of the better-rated occupations represent several years of formal education and personal discipline. Although this may or may not be true of office workers, retail sales people, public officials, and others, it should be noted that many of them hold responsible and better-paying positions.

Several of the occupational groups with low ratings are made up of transient workers. Such workers have always been regarded as doubtful credit risks because they have little sense of credit responsibility. This is true of

Table I. Credit Ratings of Various Occupations,\* 1951

Occupation	Average	Credit Bureaus	Stores
Business executives.....	90.9	91.0	90.8
Accountants and auditors.....	90.1	89.8	90.3
Retail managers (independent).....	89.9	90.1	89.8
Chain store managers.....	89.9	90.3	89.4
Physicians, surgeons, and dentists.....	89.3	88.9	89.6
Engineers (chemical, civil, etc.).....	89.2	88.6	89.9
General farmers (owners).....	88.7	89.3	88.1
Army and navy officers.....	87.7	88.0	87.4
Office workers (clerks and stenographers).....	87.1	87.7	86.5
College professors and instructors.....	87.0	87.5	86.6
Railroad clerks.....	86.8	87.3	86.4
Skilled factory workers.....	86.8	86.3	87.2
Post office employees.....	85.4	85.4	85.4
Railroad workers (trainmen).....	84.7	84.5	84.8
Hotel and restaurant managers.....	84.4	83.3	85.5
Other school teachers.....	83.7	84.4	83.0
Clergymen.....	82.5	83.1	82.0
Nurses.....	82.5	81.5	83.5
Public officials (Federal, state, and local).....	82.1	82.0	82.2
Retail sales people.....	81.5	80.7	82.2
Printers.....	80.1	79.7	80.5
Lawyers and judges.....	78.3	76.3	80.4
Traveling salesmen.....	77.0	77.4	76.7
Plumbers.....	76.9	75.9	78.0
Policemen and firemen.....	76.4	75.9	77.0
Carpenters.....	74.8	74.2	75.3
Guards and watchmen.....	74.3	72.6	76.0
General farmers (tenants).....	73.1	72.6	73.6
Truck and bus drivers.....	71.6	69.8	73.4
Soldiers and sailors (enlisted men).....	71.0	71.6	70.5
Unskilled factory workers.....	70.7	69.4	71.9
Janitors.....	70.5	69.7	71.3
Section hands.....	70.1	68.4	71.9
Plasterers.....	69.7	68.7	70.7
Barbers.....	68.1	67.4	68.7
Coal miners.....	67.7	69.1	66.9
Common laborers.....	67.5	66.7	68.3
Bartenders.....	63.8	63.3	64.3
Musicians.....	63.2	63.8	62.5
Domestic servants.....	63.1	61.5	64.6
Painters.....	61.8	61.1	62.5
Farm laborers.....	60.3	59.9	60.7

\* Percentage ratings were calculated according to the following scale: good, 92; fair, 75; poor, 50. These factors were applied to the number of times respondents rated various occupations good, fair, or poor.

those thousands of workers who frequently move from one town to another, such as men in the building trades, unskilled factory workers, section hands, common laborers, and farm laborers. Until recently it was a simple matter for a worker to "skip" his debts

and assume another name on arrival in a new community. The network of credit bureaus throughout the nation, strong union affiliations, social security registration, and income tax laws have significantly hampered this practice. In contrast to the better-graded occupa-

tions, it is considerably easier to enter these occupational areas, i.e., with few exceptions, less formal education or training and less personal discipline are required of those occupations with lower credit standings. This may partly account for their low degree of credit responsibility.

Stability of income is a more tangible characteristic of the better-rated occupations. Inasmuch as the stability of income is as important as the amount of income in credit risk appraisal, it plays an important role in credit study. Credit selling is most effective when directed toward those individuals who have the financial ability to successfully respond to the series of demands of an installment contract or the recurring amounts due on open-account purchases. Selling techniques are thus perhaps best when designed to attract the largest number of people with a reasonably regular income to move the product from the retailers' shelves. The merchant who appeals to the few family units in the highest income bracket has no particular credit problem and is not affected; and conversely, the lowest income brackets which tend to utilize all of their income for the necessities of life constitute almost no market for the credit seller. Consequently, those occupational groups which have a high degree of regularity of income would seem to make up the largest and most satisfactory group of credit purchasers in the long run.

Although the twenty-one better-rated occupations may contain a few groups which have large incomes, the fact that there is great stability of income among these workers is more

important. Periodically a few of these occupations (physicians, surgeons, dentists, and farm owners) have irregular incomes. In recent years various economic changes and better credit and collection methods have "cushioned" their irregular receipt of income and their receipts are spread more evenly over the year. A large income does not seem to indicate general credit acceptability when the stability of incomes of army and navy officers, office workers, school teachers, post office employees, and so on are compared with the equivalent but irregular incomes of lawyers, traveling salesmen, general farmers, plasterers, coal miners, musicians, and similar groups. The occupations in the lower half of Table I may not enjoy the large incomes of a few of those in the top portion of the table, but a substantial number of occupations with low credit standings receive more income than do many occupations which are rated higher. Is it logical to assume that a large income which is highly irregular may be less advantageous creditwise than a somewhat smaller income which is highly stable and secure? This may be true because a large income received occasionally by a family unit with many and changeable demands may encounter the problem of overestimating present needs while underestimating future needs. Stability of income rather than a large income characterizes the occupations in the top half of Table I.

The utilization of income also has some effect on the ratings assigned to the various occupations. Although there are numerous exceptions, many of the groups listed in the lower half of the table do not utilize their incomes



in the accumulation of equities as much as do others. Some of this is no direct fault of the individual but is due to circumstances beyond his control. During the past war and during the current armament expansion, many plumbers, carpenters, guards and watchmen, truck drivers, soldiers and sailors, and unskilled factory workers have moved from city to city or from airfield to army camp or to any place where their labor was in great demand. This mobility of labor frequently resulted in costs to the individual worker which did not contribute to his well-being although income may have remained fairly stable and at a high level. Expenses such as high rents, moving costs, higher prices for food, need for transportation, and, in some cases, outright extravagant living contribute little to a worker's progress and sense of responsibility. On the other hand, many other occupations are not so adversely affected by our recent economic changes, and along with great stability of income and the permanence in their community which their work requires, they have accumulated homes, automobiles, furniture, and other family assets which are more easily provided when income and residence are stable and are not as easily subject to unforeseen expenses. Some of the adverse circumstances mentioned above undoubtedly have contributed to a less desirable utilization of income from the standpoint of accumulation of equity in assets. There appears to be greater savings possibilities, more stability of income, and perhaps a greater sense of credit responsibility in the better-rated occupations.

### Comparisons with 1941 Study

Table II shows the relative standings of various occupations rated in 1951 compared with those rated in 1941. Although the current study used somewhat different occupational titles than did Professor Converse, the relative standings exhibit little distortion. Dentists were rated separately in 1941 and ranked 14th, whereas in 1951 physicians, surgeons, and dentists were rated as one occupational classification. Civil service employees, contractors, college students, and waiters (hotel, restaurant, and so on) were rated in 1941 but not in 1951, and their relative standings then were 8th, 19th, 23rd, and 32nd, respectively.

For the most part, the ratings in 1951 compare favorably with those in 1941 despite the fact that several of the credit managers surveyed believed there were no poor credit risks because of the changed economy and full employment during the major portion of 1951. While some occupations gained better standings in 1951, others were lower than in the earlier study. For instance, one of the most significant changes is evidenced by the present standing of physicians, surgeons, and dentists as contrasted with their former rating, i.e., 12th and 14th place. This may be accounted for by the rather recent and present-day efforts of the medical profession to be more alert in the turnover of their receivables, which results in increased ability and interest in maintaining their own credit standing. A considerable change in their early years' earning capacity has also taken place. A few decades ago the

Table II. Relative Standings of Various Occupations, 1951 Compared with 1941

Occupation	1951	1941
Business executives . . . . .	1	1
Accountants and auditors . . . . .	2	..
Retail managers (independent) . . . . .	3	7
Chain store managers . . . . .	4	3
Physicians, surgeons, and dentists . . . . .	5	12 & 14
Engineers (chemical, civil, etc.) . . . . .	6	9
General farmers (owners) . . . . .	7	10
Army and navy officers . . . . .	8	2
Office workers (clerks and stenographers) . . . . .	9	5
College professors and instructors . . . . .	10	..
Railroad clerks . . . . .	11	..
Skilled factory workers . . . . .	12	4
Post office employees . . . . .	13	15
Railroad workers (trainmen) . . . . .	14	6
Hotel and restaurant managers . . . . .	15	..
Other school teachers . . . . .	16	11
Clergymen . . . . .	17	18
Nurses . . . . .	18	16
Public officials (Federal, state, and local) . . . . .	19	..
Retail sales people . . . . .	20	13
Printers . . . . .	21	..
Lawyers and judges . . . . .	22	21
Traveling salesmen . . . . .	23	17
Plumbers . . . . .	24	24
Policemen and firemen . . . . .	25	20
Carpenters . . . . .	26	25
Guards and watchmen . . . . .	27	..
General farmers (tenants) . . . . .	28	28
Truck and bus drivers . . . . .	29	..
Soldiers and sailors (enlisted men) . . . . .	30	35
Unskilled factory workers . . . . .	31	26
Janitors . . . . .	32	27
Section hands . . . . .	33	22
Plasterers . . . . .	34	34
Barbers . . . . .	35	33
Coal miners . . . . .	36	31
Common laborers . . . . .	37	29
Bartenders . . . . .	38	36
Musicians . . . . .	39	39
Domestic servants . . . . .	40	30
Painters . . . . .	41	37
Farm laborers . . . . .	42	38

graduates from medical schools ventured into the profession by opening their own offices; and the first five years or so were lean until a substantial medical practice had been developed. Today, however, there are numerous opportunities for physicians, surgeons, and dentists to earn immediate salaries with clinics, corporations, hospitals, or governmental agencies.

Independent retail store managers or owners have also gained a better relative standing since 1941. The return of consumers to the independent merchants for scarce and better quality merchandise during the rationing period of World War II substantially increased the sales volumes and net profits of this occupation. With these increased profits many merchants were

able to take advantage of more modern and better methods of retailing and thus passed some savings on to the consumer in direct competition with the chains. The concerted efforts of independent merchants for more attractive establishments, more efficient means of distribution, free or "slight charge" services, and better quality goods may account for their improved position from an economic standpoint. Again this may be true because many of their wartime customers retained from the 1941-1947 period enjoy larger and more regular incomes. Independents may be able to maintain this high credit rating so long as their better methods of operation reduce or retain operating expenses at a level which permits a reasonable margin of profit and are therefore attractive enough to warrant the better quality coupled with the varied services which the shopper desires.

Army and navy officers were formerly rated very high. It will be noted in Table II that this group is now 8th in the relative standings. This change may be accounted for by the apparent difference in the "times" in which the two surveys were undertaken. Although they still enjoy a good position among the various occupations, military officers were more highly regarded as credit risks in 1941 than they are today. The experience of World War II has relegated the profession from a once select and highly trained group to one of general coverage of many occupations. The thousands of reserve officers who remained in the military services at the completion of World War II were perhaps those who were either marginal in their civilian capacity or

those who had not gained a foothold in a civilian career. Many of the reserves who remained in military service have been integrated into the regular ranks on relaxed requirements. In addition, the Government has gradually assumed many of their former responsibilities. Various forms of compensation, some tax exemptions, free medical care, a wide-range allotment program, and other measures have reduced the individual responsibilities of service personnel. A group of automobile insurance companies concluded from a recent occupational casualty study that military personnel are one of the poorest occupational risks. Whether this occupation definitely lacks sense of credit responsibility is not known. Because of their relatively good credit standing there are of course numerous exceptions, but as a group they are not regarded as highly as in 1941. In contrast to military officers, soldiers and sailors have gained a better relative credit standing.

College professors and instructors were not rated as a group in 1941, but were covered under the heading of "school teachers." It will be noted that this profession and other school teachers were rated separately in 1951. College professors and instructors have a better credit standing than do other school teachers. Although other school teachers have a good rating they are often paid for only nine months, whereas the universities and colleges have a higher scale to start with and pay additional salary to those doing summer teaching. The continued regularity of income is well illustrated by comparing the credit standings of these similar occupations.



Skilled factory workers, railroad trainmen, retail sales people, traveling salesmen, and several other occupations experienced lower ratings in 1951. Some of this change can be accounted for by the fact that more occupations were included in this study and consequently, on a relative basis, the comparison is slightly distorted. In addition, other factors such as labor strikes, inflationary trends, and lagging wage increases have contributed to the instability of real income among some groups and have thus affected the occupational credit risk pattern.

Professor Converse's 1941 study further revealed that women were reported to be better credit risks than men in the same occupation. More than 58 percent of the respondents in 1941 said women were better credit risks. Substantially the same findings hold for the current study, since 55 percent reported that women were better credit risks than men. Approximately 22 percent of the total reports asserted that men and women rated the same. Among the laboring groups, union members are preferred to non-union members by 64 percent of the respondents. Further, home owners and married persons are obviously considered better credit risks than their opposites.

### Occupation — a Factor in Credit Risk Appraisal

Not all credit men are in agreement as to the significance of occupation to credit risk appraisal. This was indicated earlier and is the basis for some controversy as to the value of occupational credit pattern studies. This point was further strengthened by comments

from the groups surveyed. It is again emphasized that occupation alone is not a rational basis on which to offer or withhold retail credit. What is important is the fact that there appears to be certain outstanding characteristics of the people who are in particular types of employment. It has been illustrated that regularity of income and better utilization of income may play a significant role in determining the reliability of an occupational group. It is therefore felt that occupation should not in itself be the deciding factor in the offering or withholding of credit.

Because the more specific factors which will aid in determining the reliability of risk are occupation, age, character, reputation, the amount and regularity of income, reserve assets such as savings, securities and other holdings, and equity in various kinds of property, one cannot construe an occupational credit study as a recommendation of a member of one occupational group over that of another as a better credit risk. What, then, can an occupational credit pattern indicate? An occupational credit study of an objective nature can help credit people by providing an effectual basis for better credit investigation of those occupational groups where the exposure to credit risk is greater. Individual exceptions among various occupations are so numerous that judgment on employment alone is not good business, but occupational differences are often large enough to operate as a guide to the extent of the investigation.

A sound credit structure is highly important, both to the consumers and to the retail businesses of this country. Such a structure is aided when past

happenings and future expectations are recorded in individual credit reports gained through adequate credit investigation. The intensity of a credit investigation required of an individual credit risk is suggested by the exposure to losses as reflected in Table I. It may be as costly to investigate a credit risk too thoroughly as it is to investigate

too sketchily, and therefore the credit man must strive to recognize the strong and weak points which are subject to investigation. A better basis for credit investigation and hence more rational credit transactions will guard businesses against some losses and contribute to a healthier economic position.

# The Rise and Decline of the Midwest Interurban\*

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FOR THREE DECADES the electric interurban railroad played a major part in the economic life of the Midwestern states. As a transitional step from the main-line railroad to the automobile, bus, and truck for short distance travel and small-lot shipment, the interurban provided a substantial contribution to the economic development of the area. The story of its meteoric rise and equally sudden disappearance, and of the role which it played in the transportation picture of its day is a drama rarely rivalled in the economic history of the country, yet one about which almost nothing has been written. Interurbans were built in almost all parts of the United States,<sup>1</sup> but their development reached the highest stages, and their contribution to the economy was greatest in four Midwest states—Ohio, Indiana, Michigan, and Illinois. Yet in the first three states named, the interurban is only a memory today;<sup>2</sup> in Illinois some portions of the old systems remain, but are substantially different in character from the lines of thirty years ago.

\* I am greatly indebted to my colleague, Professor Robert W. Harbeson, for assistance in the preparation of this article.

<sup>1</sup> There were but few lines in the Deep South and in the thinly settled portions of the Plains and Rocky Mountain states.

<sup>2</sup> Apart from the portion of one of the Chicago metropolitan area lines, the Chicago, South Shore, and South Bend, which extends to South Bend, Indiana.

The typical interurban was characterized by four features: electric operation, primary emphasis on passenger business, use of cars which were heavier and capable of higher speed than city streetcars, and extension beyond the limits of one city or metropolitan area. Precise definition of the term "interurban"<sup>3</sup> and sharp delineation from other carriers was never easy, as there was no clear line of demarcation between the interurban and city streetcar lines on the one hand and electrified portions of main-line railroads on the other hand. But the typical line was clearly identified by the four characteristics noted.

## Development

The first intercity electric lines were direct outgrowths of city street railway systems. Perfection of electric traction in the 1880's resulted in rapid replacement of cable- and horse-car lines, and construction of many new routes. Soon the streetcar lines began to feel their way out beyond city limits into suburbs, and then on to adjacent towns or resort spots. These initial lines were in

<sup>3</sup> Credit for originating the term is usually given to C. L. Henry, Member of Congress from Indiana during the 1890's, and owner of the Anderson, Indiana, street railway system. He was one of the first to conceive the idea of the Indiana interurban system, and one of the founders of the Union Traction of Indiana.



almost all cases built on public road rights of way. Poorly constructed track and the limited speed of the early city cars narrowly limited the feasible range of these first lines.<sup>4</sup>

By the latter part of the nineties, however, the potentialities shown by these pioneer routes led to the development of the bona fide interurban.<sup>5</sup> Separate rights of way were obtained, usually paralleling roads or steam railroads, and stations were built. Longer, heavier cars, often with express compartments, were designed specifically for high-speed intercity operation. Package freight and express business was cultivated.

However, progress was slow in the nineties; by the turn of the century the network was barely underway. But shortly after 1900 a great boom in interurban construction developed; by 1910 the systems were largely completed. New companies were chartered; stock sales were promoted; lines spread rapidly between the major cities and towns. Through links were built to connect adjacent systems. Some of the lines were poorly conceived, with little analysis of traffic potentialities; duplication was not uncommon. Just as every town was determined to have a railroad in the 1860's and 1870's, now every town was determined to have an interurban. Diverse interests were involved in the development and financ-

ing of the companies. Particularly in Indiana, the same enterprises developed interurban railroads and electric power facilities, the trolley-wire poles also carrying the intercity high-tension lines and bringing power for the first time to smaller towns and rural areas. Some of the interurbans were developed by city transit companies (themselves often power-company controlled);<sup>6</sup> some were developed by independent local interests. In the Midwest, unlike the situation in other parts of the country, the steam railroads stayed out of the interurban field.<sup>7</sup>

The development of the largest interurban in Illinois, the Illinois Traction System (now the Illinois Terminal Railroad), paralleled the national trend. When William B. McKinley purchased the Danville street railway system shortly after 1900, its interurban line to Ridge Farm gave him the idea of a through interurban from Danville to St. Louis. In 1903 he built from Danville to Champaign, and gradually filled the gap to St. Louis, partly by construction, partly by purchase of existing lines. In 1907 the link between Champaign and Decatur was completed and the through route fin-

<sup>6</sup> The interurban companies typically supplied local transit service in the smaller cities through which they operated.

<sup>7</sup> The southern New England lines were acquired by the New Haven at fantastic prices, which helped to bring the road ultimately into bankruptcy.

<sup>4</sup> This type of intercity electric line reached its highest stage of development in New England.

<sup>5</sup> It is difficult to identify the first interurban line built in the Midwest. The line from Newark to Granville, Ohio, built in 1888, is often regarded as the earliest road. The first Indiana interurban was the 11-mile line between Anderson and Alexandria, built in 1898.

On the Pacific Coast, most of the interurbans passed into the hands of the newer steam railroads in the area, which were anxious for additional freight feeder lines to allow more effective competition with their older rivals. The Western Pacific, for example, acquired the companies which now constitute the Sacramento Northern to improve its competitive position with the Southern Pacific.

ished; in the same year the Springfield-Peoria line was also placed in operation. McKinley, who also developed the Illinois Power Company, had plans for a Peoria-Chicago line, which would have provided a through route from St. Louis to Chicago, but the gap between Mackinaw Junction and Streator on the McKinley-owned Chicago, Ottawa, and Peoria was never closed. The Traction later acquired extensive terminal properties in the East St. Louis area, and built its own bridge across the Mississippi.

By 1915 about 7,500 miles of interurban track (equivalent to two lines from New York to San Francisco) extended through Michigan, Ohio, Indiana, and Illinois, with a few hundred miles in Wisconsin.<sup>8</sup> The figure for the entire country was about 18,000 miles.<sup>9</sup> Chart 1 shows the various lines which were in operation in these states; Chart 2 shows the Illinois lines in greater detail. The maps show all lines in operation at some time between 1900 and 1925 rather than those existing as of a certain date. Although Ohio had the greatest mileage, the network of lines was most complete in Indiana; lines radiated out of Indianapolis in 12 directions, and in the peak years over 500 interurban trains a day arrived at and departed from the union interurban terminal. Only three cities in Indi-

<sup>8</sup> Of these states, Ohio had the most mileage (2,780), followed by Indiana (1,798), Illinois (1,590), and Michigan (1,027). These are 1917 figures; see U. S. Department of Commerce, *Census of Electric Railways, 1917*.

<sup>9</sup> Outside of the states mentioned, Pennsylvania, New York, and California had the greatest mileages, with substantial amounts in Massachusetts, Connecticut, Texas, Iowa, and Utah.

#### KEY TO CHART 1\*

(See Chart 2 for detailed identification of Illinois lines)

1. Cleveland and Eastern Traction
2. Cleveland and Chagrin Falls Railway
3. Cleveland, Painesville and Eastern Railway
4. Lake Shore Electric Railway
5. Norwalk and Shelby Railroad
6. Cleveland, Southwestern and Columbus Railway
7. Northern Ohio Traction and Light
8. Youngstown and Suburban Railway
9. Steubenville, East Liverpool and Beaver Valley Traction
10. Monongahela, West Penn. Public Service
11. Stark Electric Railway
12. Wheeling Traction
13. Cincinnati, Georgetown and Portsmouth Railway
14. Cincinnati, Lawrenceburg and Aurora Railway
15. Cincinnati and Dayton Traction (C and LE)
16. Cincinnati, Milford and Blanchester Traction
17. Dayton and Western Traction
18. Lima and Defiance Railroad
19. Ohio Electric Railway (C and LE)
- (19) Additional portions of the Ohio Electric Railway prior to reorganization in 1920
20. Indiana, Columbus and Eastern Traction (C and LE)
21. Columbus, Delaware and Marion Railway
22. Columbus, Marion and Bucyrus Railway
23. Scioto Valley Traction
24. Ohio Valley Electric Railway

\* Names followed by C and LE are those of lines which eventually became portions of the Cincinnati and Lake Erie Railroad; those followed by IRR became portions of the Indiana Railroad.

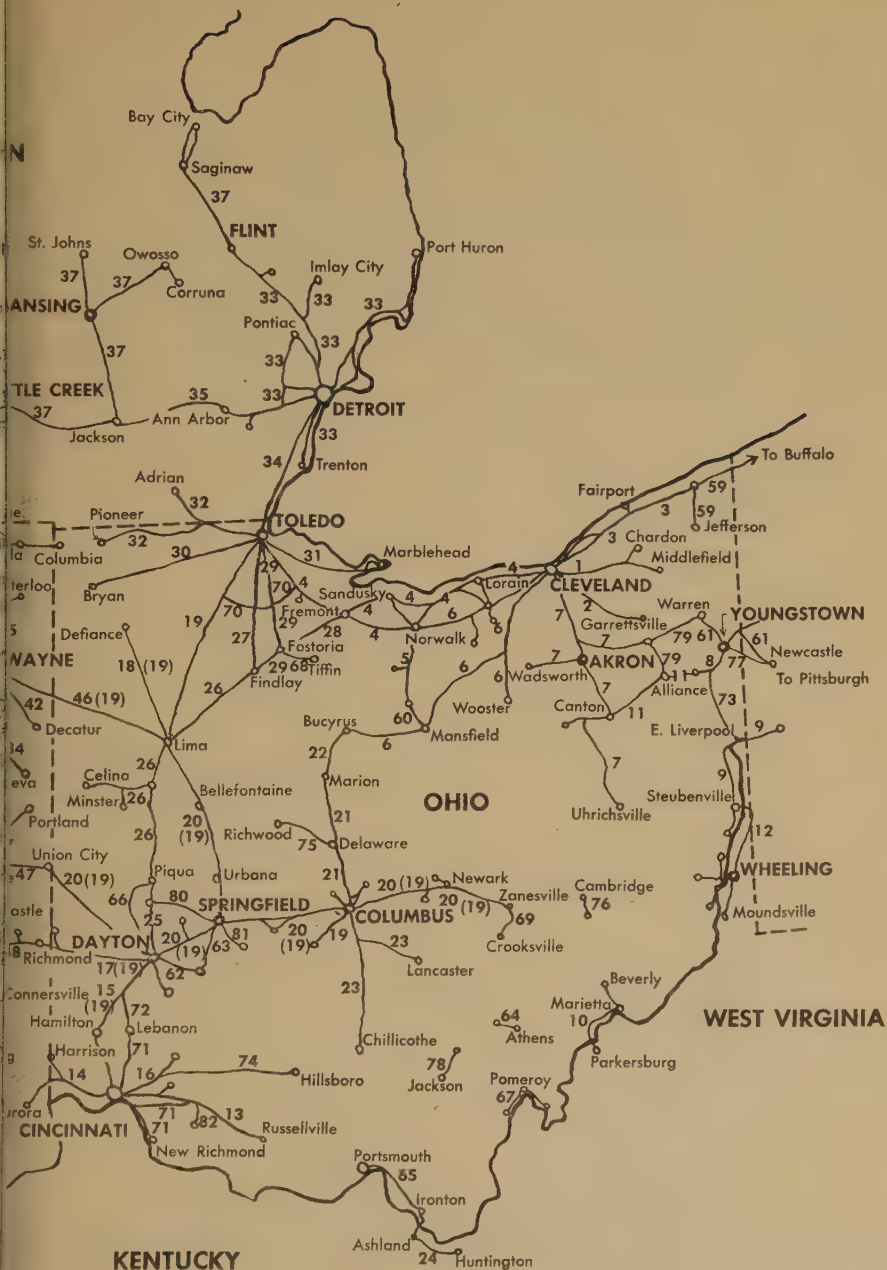
Because of reorganizations and consolidations the names of a number of the lines were changed from time to time. The name given is one used during a significant portion of the life of the road; in a few instances other names are given in parenthesis.

25. Dayton and Troy Electric Railway
26. Western Ohio Railway
27. Toledo, Bowling Green and Southern Traction
28. Fostoria and Fremont Railway
29. Toledo, Fostoria and Findlay Railway
30. Toledo and Indiana Railroad
31. Northwestern Ohio Railway and Power
32. Toledo and Western Railway
33. Detroit United Railways
34. Detroit, Monroe and Toledo Short Line
35. Detroit, Jackson and Chicago Railway
36. Grand Rapids, Grand Haven and Muskegon Railway
37. Michigan Railway Lines (Michigan United Traction)
38. Chicago, Lake Shore and South Bend Railway
39. Chicago, South Bend and Northern Indiana Railway
40. Gary and Valparaiso Railway
41. Winona Interurban Railway
42. Indiana Service Corporation (Ft. Wayne and Northern Indiana Traction) (I RR)
43. Marion, Bluffton and Eastern Traction Company
44. Northern Indiana Power Company (I RR)
45. Fort Wayne and Northwestern Railway (I RR)
46. Fort Wayne, Van Wert and Lima Traction
47. Union Traction of Indiana (I RR)
48. Terre Haute, Indianapolis and Eastern Traction (I RR)
49. Indianapolis and Cincinnati Traction
50. Interstate Public Service Company (I RR)
51. Southern Indiana Gas and Electric
52. Illinois Traction System
53. Chicago, Ottawa and Peoria Railway
54. Chicago, North Shore and Milwaukee Railroad
55. Rockford and Interurban Railway
56. Milwaukee Northern Railway
57. Milwaukee Electric Railway and Light Company
58. Eastern Wisconsin Electric Company
59. Pennsylvania and Ohio Traction
60. Mansfield and Shelby Interurban
61. Pennsylvania-Ohio Electric Railway
62. Dayton, Springfield and Xenia Southern Railway
63. Springfield and Xenia Railroad
64. Hocking-Sunday Creek Traction
65. Portsmouth Street Railway
66. Dayton, Covington and Piqua Traction
67. Ohio River Electric Railway
68. Tiffin, Fostoria and Eastern Electric Railway
69. Southeastern Ohio Railway
70. Lake Erie, Bowling Green and Napoleon Railway
71. Interurban Railway and Terminal
72. Lebanon and Franklin Traction
73. Youngstown and Ohio River Railroad
74. Cincinnati and Columbus Traction
75. Columbus, Magnetic Springs and Northern Railway
76. Ohio Service Company
77. Mahoning Valley Railway
78. Wellston and Jackson Belt Railway
79. Cleveland, Alliance and Mahoning Valley Railroad
80. Springfield, Troy and Piqua Railway
81. Springfield and Washington Railway
82. Felicity and Bethel Railroad
83. Southern Michigan Railway (39)
84. Bluffton, Geneva and Celina Traction
85. Gary and Southern Traction
86. Gary and Interurban Railroad
87. St. Joseph Valley Traction
88. Evansville Suburban and Newburgh Railway
89. Evansville Railways
90. Grand Rapids, Holland and Chicago Railway
91. Benton Harbor and St. Joe Railway and Light
92. Lebanon-Thorntown Traction
93. Kalamazoo, Lake Shore and Chicago Railway (operated by Michigan Railways, but never electrified)
94. St. Louis, O'Fallon and Lebanon Railway
95. East St. Louis and Belleville Electric Railway
96. East St. Louis, Columbia and Waterloo Railway
97. Aurora, Elgin and Chicago Railroad
98. Chicago and Joliet Railway



**Chart 1. INTERURBAN LINES IN OPERATION BETWEEN 1900 AND 1930;  
OHIO, INDIANA, MICHIGAN, EASTERN ILLINOIS, AND WISCONSIN.**





**Chart 2. INTERURBAN LINES IN ILLINOIS DURING THE PERIOD FROM 1900 TO 1925—OPERATING AND PROJECTED ROUTES.**





## KEY TO CHART 2 — Illinois Interurban Railroads\*

- |   |  |
|---|--|
| 1. Central Illinois Traction Company  | 25. Galesburg and Western Railroad   |
| 2. Cairo and St. Louis Railway  | 26. Sterling, Dixon and Eastern Electric Railway                             |
| 3. Chicago, Aurora and DeKalb Railroad  | 27. Murphysboro and Southern Illinois Railway                                |
| 4. Chicago, Harvard and Geneva Lake Railway   | 28. DeKalb, Sycamore and Interurban Traction                                 |
| 5. Fox and Illinois Union Railway   | 29. Galesburg and Knoxville Traction   |
| 6. Bloomington, Pontiac and Joliet Electric Railway   | 30. Southern Illinois Railway and Power Company                              |
| 7. Chicago, Lake Shore and South Bend Railroad (now Chicago, South Shore and South Bend Railroad) | 31. Aurora, Elgin and Fox River Electric Railway                             |
| 8. Chicago, Ottawa and Peoria Railway   | 32. Galesburg and Kewanee Electric Railway                                   |
| 9. Rockford and Interurban Railway  | 33. Clinton, Davenport and Muscatine Railway                                 |
| 10. Elgin and Belvidere Electric Company  | 34. Keokuk Electric Company  |
| 11. Aurora, Plainfield and Joliet Railway   | 35. Kankakee and Urbana Traction   |
| 12. Joliet and Eastern Traction Company   | 36. Coal Belt Electric Railroad  |
| 13. Chicago and Joliet Railway  | 37. St. Louis, O'Fallon and Lebanon Railway                                  |
| 14. Chicago and Interurban Traction Company   | 38. East St. Louis and Belleville Electric Railway                           |
| 15. Chicago, North Shore and Milwaukee Railway <sup>1</sup>                                       | 39. Central Illinois Public Service Company                                  |
| 16. Peoples Traction Company  | 40. Centralia Traction   |
| 17. Peoria Railway Terminal   | 41. Northshore and Western Railway   |
| 18. Illinois Traction System (now Illinois Terminal Railroad)                                     | 42. Terre Haute, Indianapolis and Eastern Traction                           |
| 19. Aurora, Elgin and Chicago Railroad (now Chicago, Aurora and Elgin)                            | 43. Northern Illinois Electric Railway (Lee County Central Electric Railway) |
| 20. Hammond, Whiting and East Chicago Railway   | 44. Alton, Jacksonville and Peoria Railway                                   |
| 21. East St. Louis and Suburban Railway   | 45. Dixon, Rock Falls and Southeastern Railway                               |
| 22. East St. Louis, Columbia and Waterloo Railway   |  |
| 23. Illinois Central Electric Railway   |  |
| 24. Rock Island Southern Railway  |  |

\* Because of reorganizations and consolidations, changes in name were frequent; the name given is that used for a significant period during the years in which the roads were of particular importance.

<sup>1</sup> The key number for this line, which extends northward from Chicago to Milwaukee, was inadvertently omitted from Chart 2.

ana with populations of over 5,000 — Madison, Vincennes, and Bloomington — were not served by interurbans.

The major routes in these states included:

1. The lake shore lines from Detroit through Toledo to Cleveland, with a line eastward from Cleveland to Erie and Buffalo.
2. The eastern Ohio routes from Cleveland to Akron, Canton, Pittsburgh, and Wheeling.
3. The Cincinnati-Cleveland routes — one via Springfield, Columbus, and Delaware; the other via Lima and Findlay.
4. The Cincinnati-Toledo route with a branch to Ft. Wayne from Lima.
5. The east-west route from Terre Haute to Indianapolis, Dayton, Springfield, Columbus, and Zanesville, with alternative routes between Indianapolis and Dayton via Richmond and via Muncie.
6. The Indiana north-south route from Louisville, Kentucky, via Indianapolis and Kokomo to Elkhart and South Bend, with a connection from the latter to Chicago.
7. The Indianapolis - Ft. Wayne, Ft. Wayne-Lafayette, and Lafayette-Indianapolis lines.
8. The Michigan routes — the north route from Detroit to Flint and Bay City; and the east-west route from Detroit to Jackson and Lansing, and to Battle Creek, Grand Rapids, and Muskegon.
9. The routes out of Chicago — eastward to South Bend; northward to Milwaukee and Sheboygan; northwestward to Rockford, Janesville, and Freeport; and westward down the Illinois Valley to Princeton.
10. The Illinois Traction System from Danville and from Peoria via Springfield to St. Louis.

As the systems were integrated, long distance trips became possible; for example, a person could travel by inter-

urban from Freeport, Illinois, or Sheboygan, Wisconsin, to Utica, New York; from Louisville or Cincinnati to Bay City, Michigan. Actually such long distance travel was unimportant because of the numerous changes required and because the interurbans were slower than the steam railroads. A few missing links that were never completed would have provided a much better integrated system; for example, the east-west direct route from Chicago to Toledo and Cleveland was not finished, though for a time only a fifteen mile gap in western Ohio, between Columbia and Pioneer, remained. A twenty-mile line from Paris to Ridge Farm would have connected the Illinois Traction System with the Indiana system. The integration between the Indiana and northern Illinois systems was more apparent than real; the only link was the roundabout line via Warsaw, and little through traffic ever developed. The Michigan system was connected with the other systems only via Toledo.<sup>10</sup>

Apart from the main lines, a number of branches were built, plus a substantial number of isolated lines, especially in Illinois. As shown in Chart 2, many of these connected very small towns; as a rule, they were projected toward larger cities but were never finished. For example, the Dwight-Pontiac line was a segment in an unfinished route

<sup>10</sup> A connection was almost realized between Benton Harbor and Kalamazoo. The Michigan Railways operated under lease for a few years the line of the Kalamazoo, Lake Shore, and Chicago, which reached Paw Paw Lake, also on the interurban line running north from Benton Harbor. But the Kalamazoo line was never electrified, as had been planned.

from Bloomington to Joliet and Chicago. Had the coming of the automobile been delayed for twenty years it is likely that many of these lines would have been completed; the motor vehicle stopped further expansion of the interurban before many of the projected lines were completed.<sup>11</sup>

In total, roughly 150 separate interurban companies were in operation in the peak years in the four states named. Much of the mileage, however, was concentrated in the hands of a relatively few companies. In Illinois, the Illinois Traction System and its affiliate, the Chicago, Ottawa, and Peoria, operated about 700 miles, or approximately half the total. The Terre Haute, Indianapolis and Eastern, and the Union Traction of Indiana, each with over 400 miles of line, operated a large portion of the Indiana mileage; two companies operated most of the lines in Michigan.

It is impossible to obtain an accurate figure of investment in the interurban properties. On the basis of available information, it would appear that the total investment was between \$500 million and \$600 million in the four states. In Illinois in 1912, when almost all lines (about 1,500 miles) were in operation, the reported cost of the

properties was \$120 million.<sup>12</sup> The lines between the larger cities were reasonably profitable from the beginning;<sup>13</sup> some made very high profits. Many, however, had excessive fixed charges, and passed through one or more receiverships. Some of the smaller lines had insufficient business to cover operating costs, and remained in business for only a few years. The industry as a whole showed a reasonable return on investment in the profit and loss statements of the earlier years, and might have continued to show profits in later years had the early volume of business held up. But actually much of the investment was lost when only partly depreciated; thus the depreciation charges of the earlier years were not adequate. If this fact is taken into consideration, the real return made over the years of operation would probably be very slight or nonexistent.

The basic features of interurban operation did not change greatly over the three decades in which the lines were in existence. Single-car trains were the standard operating unit, with multiple cars confined to excursions and rush-hour operation out of large cities. Two-man crews were typical; this fact, plus the relative absence of

<sup>11</sup> Charters were obtained for a great many lines that were never even started; some of these are shown in Chart 2 by dotted lines. One of the most fantastic projects was that for a line from Chicago to New York, to be built in an absolutely straight line between the two. A few miles were placed in operation between LaPorte and Woodville Junction, north of Valparaiso, Indiana, and the cars for years carried destination signs of New York on one end and Chicago on the other. No more track was ever built, and the LaPorte line was eventually abandoned.

<sup>12</sup> See *Annual Report, Illinois Railroad and Warehouse Commission, 1912-1913*, p. 137. The Chicago elevated lines, and the Terre Haute, Indianapolis, and Eastern, with only a few miles of line in Illinois, were omitted.

<sup>13</sup> For example, in 1912, a typical year, the Terre Haute, Indianapolis, and Eastern, a major Indiana company, showed operating revenues of \$2,690,000; operating expenses of \$1,553,000; net operating revenue of \$1,137,000; and net income of \$552,000, on a reported investment of about \$25,000,000.



restrictive operating rules, kept costs per train-mile far below those of the steam railroads. A figure of 20 cents per car-mile was typical. Trains operated on frequent schedules, in many cases every hour during the daytime. After 1910 the earlier wooden cars, with their clerestory roofs, elaborate colored glass, and cane seats, began to give way to new steel cars with plush seats. Track standards on the more profitable lines were improved, and automatic signalling systems were installed.<sup>14</sup>

### Economic Significance

By 1910 the interurban had become a major element in the transportation picture of the Midwest. Primarily the lines were passenger carriers; typically this service yielded 80 percent or more of total revenues. The interurban's most important contribution was providing, for the first time, efficient and speedy service from rural areas and small towns to adjacent cities. In so doing it rendered substantial service in breaking down the isolation of farms and small villages. Frequent service, with numerous and convenient stops, greatly facilitated travel to market, to school, and to entertainment. The trend toward shopping in larger centers in preference to rural and village stores, which became so marked after the development of the

automobile, was started by the interurban. A shopping trip to a city 30 miles away became a simple and routine matter, instead of a major and time-consuming excursion. Likewise, week-end trips "to the country" were facilitated; many of the interurban companies developed countryside amusement parks and resorts.

In addition, however, the interurban became the standard means of travel between the larger cities served, up to a limit of about 150 miles, with some longer distance travel. As a consequence, the steam railroads lost a very large portion of their shorter distance travel. The interurban, though slower on the long runs, and somewhat less comfortable,<sup>15</sup> offered great advantages in frequency of service and conveniently-located stations. In addition it offered informality and avoidance of the impersonal nature of main-line railroads — a forerunner of the same spirit which causes many persons today to prefer buses for intercity travel. The usual practice of operating on city streets into the downtown areas of cities was of great convenience, especially to the shopping traffic, but was a serious source of delay for longer distance travel. In almost all cases city streetcar tracks were used; as a result, speed in getting into and out of larger cities was drastically limited to that of the city cars. Once in the country, however, the speed performance was good despite frequent stops and light

<sup>14</sup> A few lines (those in western Michigan, and the Scioto Valley Traction, for example) utilized a third rail as a source of power to avoid the danger of loss of the trolley contact, a constant source of nuisance. The third rail, however, presented a fatal attraction for livestock and small boys, and encountered some difficulty with heavy snow. Third-rail operation was most common in California.

<sup>15</sup> As long distance travel increased, parlor cars were often carried and limited-stop schedules were operated. A few lines operated overnight sleeping cars; these were provided, for example, between Louisville and Indianapolis, Champaign and St. Louis, and Peoria and St. Louis.

track; high acceleration plus speeds up to 70 and 80 miles an hour allowed the trains to average 30 to 35 miles an hour.

Interurban freight business was of much less importance.<sup>16</sup> However, the lines sought package freight and handled farm produce, especially milk; they provided substantial improvement over the steam railroads in speed of delivery; and they took a substantial portion of the less-than-carload business of the railroads. By providing same-day delivery of goods from wholesale centers to retailers, they materially speeded the flow of goods through distribution channels. The development of Indianapolis as a wholesale center was aided by the great network of lines fanning out from the city. Carload freight business was for the most part unimportant, being confined largely to movements of coal and gravel from mines or quarries on the lines. Although the lines were of standard gauge,<sup>17</sup> little interchange of traffic with the steam roads developed; the latter had already blanketed the area and were not anxious to facilitate the growth of the freight business of their competitors. It was difficult for the interurbans to gain direct access with sidings to factories and warehouses already served by the steam roads. Operation on city streets seriously restricted freight car operation; not only was it physically difficult and sometimes impossible because of the

sharp curves,<sup>18</sup> but it was very unpopular with city officials.

### The Downfall of the Interurban

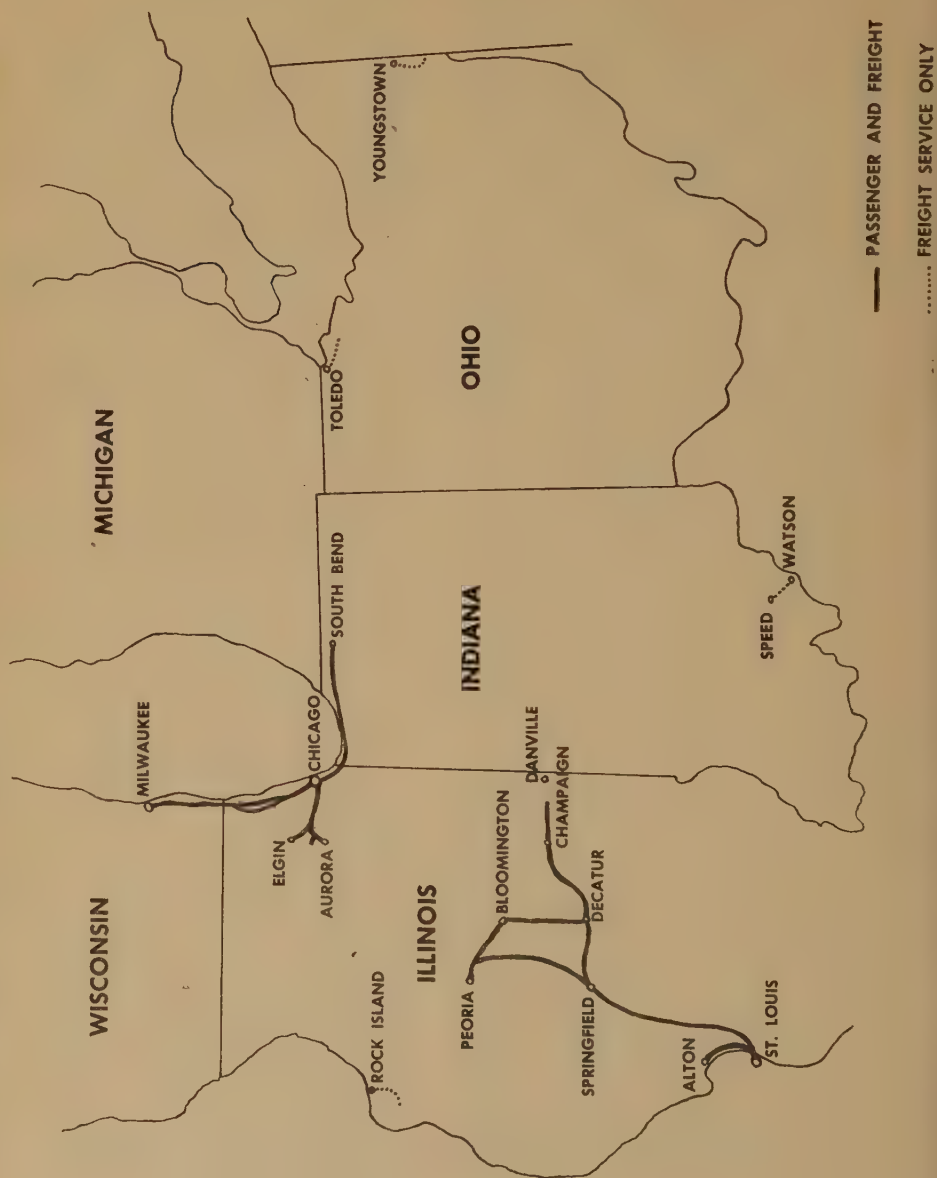
Few industries in the history of the United States have collapsed with the speed at which the interurban systems came to an end. In the 15-year period from 1927 through 1941 the great network built up twenty years before all but vanished, most of the lines being abandoned between 1929 and 1937. As shown in Chart 3, not a single mile of the great Ohio-Indiana-Michigan network (except the line to South Bend from Chicago) remains in passenger operation today; about 40 miles of track (out of the original 6,000) is still in use for freight service. The lines have vanished so completely that they are almost forgotten; it is difficult to trace the paths of the lines in many cases. An overgrown embankment, an unused bridge abutment, a wrecked transformer station, plus the remains of old cars serving as henhouses are the only traces through the countryside. Occasionally, a short stretch of track down the main street of a town, or an old station rebuilt into a garage or store serves as a reminder of the heavy interurban cars which rolled through in the days when the automobile was young. Few persons who see the bus terminal in downtown Indianapolis—with its high-arched steel roof—realize that it was once the union interurban terminal, the center of the Midwest systems.

<sup>16</sup> Few of the lines had freight motors; freight was handled in passenger cars or in freight cars pulled by passenger cars.

<sup>17</sup> In Pennsylvania most of the lines used the broad gauge of the streetcar systems in that state.

<sup>18</sup> The wheel trucks on the interurbans, like those of streetcars, swivelled on curves. Freight car wheel trucks are fixed in place. Similarly, standard freight car couplings prevent the negotiation of sharp curves.

Chart 3. INTERURBAN LINES IN OPERATION, 1952; OHIO, INDIANA, MICHIGAN, ILLINOIS, AND WISCONSIN.





The interurbans were destroyed by one development—the coming of the motor vehicle, which possessed to a greater degree the same advantages of flexibility and convenience the interurban had enjoyed in comparison with the steam railroad. The advantages of the latter over the interurban on longer haul business served to protect much of its business against motor competition and to prevent its destruction. But the interurban was in the position of enjoying only advantages over the steam railroad which motor vehicles possessed to a greater degree. More than anything else, the automobile eliminated most of the interurban business. For the remaining passenger traffic, the bus was cheaper to operate, since no track maintenance was necessary and the operating unit was smaller. Servicewise, the interurban was in many respects superior, especially if the track was well-maintained, but not sufficiently so to offset the cost differences. In states where bus competition was allowed, abandonment of the interurbans came sooner than it might otherwise have. But even when competition was prevented, the interurban companies soon turned to bus operation themselves.<sup>19</sup>

So far as freight traffic was concerned, the bulk of the interurban business was of a type particularly well-suited for truck transportation, which necessitated less rehandling. Even the carload traffic—not of much importance—was of a short haul character and was subject to truck competition. The interurbans

could have maintained themselves only if they had been able to develop substantial longer distance carload traffic. For reasons noted earlier, this was not possible for most of the Midwest lines.

Actually, the automobile was invented in roughly the same period as the interurban. But the latter progressed much more rapidly. Electric motors were simpler than automobile engines and were perfected more quickly; mechanical difficulties and the lack of good roads held the growth of the automobile to a snail's pace for 25 years. Meanwhile the interurban network was built; millions of dollars were invested in the industry with little thought of the dangers from the growth of automotive transportation. There are few parallel instances of mass misdirection of investment in a period in which the handwriting of technological obsolescence was already on the wall. The case was one of completely mistaken expectations about future business potentialities.

Even as early as 1910 autos and "jitneys"<sup>20</sup> were commencing to make inroads upon passenger travel to a sufficient extent that few interurbans were built after that date. But the effects were not serious until after World War I. The war itself greatly aided the technological development of the motor vehicle, as World War II did the airplane. The decade of the twenties saw the primary transition to the motor

<sup>19</sup> The name of Indiana Railroad is still to be found on the orange buses which serve much of central Indiana.

<sup>20</sup> The "jitneys" were the first buses—usually large autos with seats added—operated, as a rule, by individuals in city and suburban service on best-traffic routes. As early as 1915 they were a serious headache to city transit systems; regulation soon put them out of business, and the streetcar reigned supreme in city transit service for another fifteen years.

vehicle; the great road network built during the period, plus mechanical improvements, brought the automobile into common usage. By the end of the decade the effects on interurban business had become so serious that many small lines and a few important ones had been abandoned,<sup>21</sup> and doubts about the future of the industry were arising. In general, however, the system was largely intact in 1930.

The final blows against the industry were dealt in the 1930's; the combination of the depression and continued growth of the automobile caused such a drastic loss in interurban revenues that in many cases they quickly fell below operating costs. Many miles of track were abandoned, with almost total loss of investment. A number of the remaining companies in the states east of Illinois were consolidated into two large companies, the Cincinnati and Lake Erie in western Ohio, and the Indiana Railroad in Indiana. Drastic economies were effected, and strenuous efforts were made to regain traffic by lower rates and purchase of new lightweight equipment. But the odds were too great; abandonment was inevitable. Most of the mileage was gone by 1939; in February of 1941 the cars of the Indiana Railroad made their farewell trip on the Indianapolis-Ft. Wayne run;<sup>22</sup> and suddenly the great empire of Ohio, Michigan, and Indiana was at an end.<sup>23</sup>

<sup>21</sup> The most important lines abandoned prior to 1930 were the western lines of the Michigan system.

<sup>22</sup> This route was of particular importance since the two cities are not connected by a direct railroad route.

<sup>23</sup> A few segments were kept in operation for freight service, as shown in Chart 3. Passenger service was retained on the Youngstown-Leetonia line, a segment of the old route to Wheeling, until 1948.

In Illinois, roughly half the lines suffered the same fate as their neighbors to the east. But the Illinois Traction System had succeeded in building up sufficient carload freight business, especially in the area between St. Louis and Peoria, so that continued operation was profitable, despite the loss of the bulk of the passenger business. Some trackage has been abandoned;<sup>24</sup> the passenger service has been drastically curtailed. Today the line is primarily a freight hauler, distinguished from the main-line railroads only by its use of electricity for power; the typical interurban characteristics have been largely lost.

Likewise, three lines still operate from Chicago into the immediately surrounding territory. These roads have retained sufficient passenger business to allow continued operations, partly because of the high population density, partly because traffic congestion renders their business less subject to automobile competition. But the Chicago, Aurora, and Elgin, and the Chicago, North Shore, and Milwaukee, which rely largely on passenger traffic, have been in financial difficulties for some years, despite the useful function which they serve in providing rapid transit service; the former line is now contemplating substitution of buses. Of

<sup>24</sup> In April, 1952, service was discontinued from DeLong, east of Ogden, to Danville, on the original main line. The immediate occasion was the desire of Danville to repave the street on which the tracks ran; actually the real source of abandonment was the loss of the coal and gasoline traffic which this line once provided. Passenger service will undoubtedly be discontinued east of Champaign in the near future.

In June, 1952, the company asked permission to abandon the line from Decatur through Bloomington to Mackinaw Junction.

the three, only the Chicago, South Shore, and South Bend, which has a much heavier freight traffic, has been in a stable financial condition; the industrialization of the area which it serves has greatly increased in the years since it was built.<sup>25</sup>

In other parts of the country the trend has been much the same. The New England network was gone by 1930; throughout the country, lines were abandoned during the thirties; some of those which survived until World War II have been discontinued in the postwar period. Today there are only about 16 passenger-carrying interurbans in the United States, including the 4 Illinois roads.<sup>26</sup> Several of these are close to the point of abandonment, either in their entirety, or for passenger service. Others are primarily freight lines.<sup>27</sup> A number of the

<sup>25</sup> One other Illinois interurban, the St. Louis and Belleville Electric, operates freight service between East St. Louis and Belleville.

Until May, 1952, the Rock Island Southern operated between Rock Island and Aledo, and is shown on Chart 3, which was prepared before that date.

<sup>26</sup> Four are in Iowa and four in Pennsylvania; one each in Maryland, Oklahoma, Oregon, and Utah. There are two intercity passenger lines in California, but they operate only within metropolitan areas. There are seven passenger interurbans in Canada.

<sup>27</sup> The Cedar Rapids and Iowa City Railway, connecting the two cities of the corporate name, is perhaps the best example of the old-time interurban, with frequent passenger service, still in operation.

former interurbans on the West Coast continue in operation for freight service; these are lines which "grew up" with the economic development of the area, and gained substantial carload freight business. But they have lost the "interurban" characteristics; some have even abandoned electricity for Diesel power.

The contribution of the interurbans was substantial; in many ways they were the forerunners of the revolution in transportation brought about by the motor vehicle. They offered flexibility and convenience in passenger service not possible with the main-line railroads, partly because electric operation made small units economical, partly because it permitted use of city streets. They introduced the trend toward large-city shopping by persons in rural areas; they served as the first school buses; they came close to supplying the frequent and speedy delivery with store-door service which the trucks were to provide more effectively at a later date. They initiated a reversal of the trend toward dominance of transportation by large impersonal enterprises. However, the motor vehicle offered the advantages of the interurban to an even greater degree; it destroyed the economic justification of the typical interurban and thus supplanted it.



# The Economics of Magazine Publishing: The Role of the Publisher

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OF ALL THE MEDIA of mass communication, the contemporary American magazine has been the least studied and appraised by students of the press. Although scholars have painstakingly reported its early development, there exists no history dealing with the magazine exclusively since 1900, and after that year circulations reached millions instead of thousands. The organization of the magazine industry, the peculiar problems of the industry, the characteristics of the modern magazine, the impact of the magazine on public opinion and popular culture — these things have seldom been studied. And, curiously, the magazine industry, which provides business magazines for store window dressers and coin machine operators, has rarely been able to support a trade magazine for itself.

Never, to this author's knowledge, has anyone satisfactorily outlined the role of the magazine publisher. Yet the role of the publisher is the clue to understanding the magazine industry and developments in it over the past half-century. Among other things, the publisher's role helps to explain the diversity of magazines, the paucity of certain kinds of magazines, the relatively short lifespans of certain types of magazines, the sameness of editorial content in a given magazine and even the major limitations on what a magazine may or may not discuss.

The publisher customarily gets financial support for his magazine in one of three ways. First, the magazine may draw a subsidy of some sort. Many trade association and fraternal magazines, for example, count on revenue from the treasury of the sponsoring organization. Although magazines of this type are fairly numerous, they are excluded from the remainder of this discussion. Second, the magazine may depend on its readers for the entire cost of production and distribution, as does the *Reader's Digest*. The third and most common type of support comes from advertising and the sale of copies.

The publisher of a magazine without advertising is the producer of a convenience good which he markets at low unit cost and at a high rate of turnover. The publisher of a magazine carrying advertising sells both a product and a service. On the one hand, he sells the advertiser a service — that of carrying the advertiser's message to a carefully screened homogeneous reader group. On the other hand, he produces and sells a low-cost convenience good to the reader. Both types of publisher, in a sense, market a new model each week or each month.

## Selecting the Audience

Both types of publishers, too, operate in much the same fashion. First the publisher carefully determines the

reader group he wishes to reach. Then he devises an editorial formula which will attract and retain his chosen reader group. This "essence of publishing" has seldom been stated more succinctly and realistically than in a speech on the economics of publishing by Willard Chevalier, executive vice-president of McGraw-Hill:

First, he [the publisher] selects a reader-group. Then he determines the type of editorial service that he will offer to that reader-group. To use a rough analogy, he hires a hall, he selects the people that he will ask to come, then he decides what kind of a program he will put on to interest them and hold them when they get there.

Then he selects his advertiser groups. He selects those groups that have business stories appropriate to the same people he plans to assemble in his editorial audience.

Involved in all this, of course, is his circulation job which involves his finding the people he has selected for his reader-group and selling them the idea of coming to the editorial hall he is setting up for them.

Finally he has the job of selling his producers to come in for a certain length of time at so many bucks per throw to talk to the audience and bring together those elements in a proportion that enables a publisher to carry on a solvent commercial enterprise.

Thus each magazine is designed to appeal to some homogeneous "public" within the total population. The publisher will try to achieve maximum circulation within his chosen "public"; but ordinarily, he cannot hope to extend his circulation beyond it without altering the editorial formula that attracted his initial readers. For example, *Seventeen* is edited for girls of 13 through 19; of its readers, 80 percent are 15 through 19 and 64 percent are 16

through 19. The publisher estimates that his possible total audience was 7,500,000 in 1951, and will be 10,000,000 in 1960. To attract his reader group, he has devised an editorial formula which includes 24 percent cultural and general copy, 6.3 percent beauty and health, 6.4 percent food, 6.5 percent furnishings, 9 percent amusements, and 25.6 percent apparel copy. To these broad subjects, the magazine has evolved its own distinctive approach. Should *Seventeen* decide to enlarge its reader group to include women of, say, up to 35, its editorial approach would have to be changed. One result, no doubt, would be that the magazine would lose a large number of its present readers.

An established magazine can switch to an entirely different reader group, but the change is risky. When *Redbook* and *Charm* recently found new audiences, one trade magazine commented on their "notable achievement."<sup>1</sup> Wade Nichols began beaming *Redbook* at a younger audience soon after he became editor in July, 1949. His seven-stage program included a new editorial balance and approach. He acknowledged that he was "obviously fooling with something pretty basic," but within two years the magazine's subtitle officially recorded the switch: "The Magazine for Young Adults." Editor Helen Valentine steered *Street and Smith's Charm* from a magazine for the business girl to a fashion, beauty, and service magazine for the woman, single or married, who works.<sup>2</sup>

The publisher, of course, may origi-

<sup>1</sup> *Tide*, February 8, 1952, p. 44.

<sup>2</sup> *Ibid.*

nally underestimate the size of his chosen public or the demand for his product. If his magazine's circulation climbs faster than he can adjust his advertising rates, success can be expensive. Time, Inc., originally intended *Life* as a class magazine with a circulation of 400,000. But copies of the first issues sold so rapidly that the publisher was soon faced with a major policy decision: Should he stick to the circulation to which advertising rates were geared or should he risk financial loss by supplying the demand? *Life* decided to meet the demand. As its guaranteed circulation was only 250,000, advertisers were soon getting a bonus circulation of 750,000. In the year and a half during which advertising rates lagged behind circulation, Time, Inc., lost approximately \$5,000,000 on *Life*.<sup>3</sup> One official of Time, Inc., has remarked, "The immediate success of this new magazine was almost the cause of its death in infancy."<sup>4</sup> In the early years of this century when circulation of the *Saturday Evening Post* was booming—it jumped from 2,230 in 1897 to 314,670 in 1902 to nearly two million by 1912—the Curtis Publishing Company was in a similar situation. Time and again circulation outran advertising rates, cash in the till dwindled, and advisers counseled caution.<sup>5</sup>

<sup>3</sup> Anonymous, "Picture Magazines: 10 Years," *Tide*, December 20, 1946, p. 18. Sources do not make clear whether this was an actual dollar loss or a sum representing net advertising revenues the magazine might have taken in.

<sup>4</sup> Eric Hodgins, *The Span of Time* (New York: Time, Inc., 1946), p. 7. Pamphlet reprint of speech at Chautauqua Institution, New York.

<sup>5</sup> Frederick Lewis Allen, "The American Magazine Grows Up," *Atlantic*, November, 1947, p. 80.

To succeed, then, the publisher must carefully select his audience. If he wants advertising, he needs a homogeneous group of consumers he can deliver to advertisers. If he plans to do without advertising, he needs a homogeneous group of readers whose tastes and interests he can satisfy. A grasp of this simple, elementary principle that each magazine seeks a homogeneous public makes understandable most of the characteristics of the contemporary magazine. For the points that follow, there are obviously other explanations. But the principle of audience selection is so basic, yet so commonly overlooked by laymen and underestimated by students of the press, that it alone has been used to explain some characteristics of magazine publishing. Let us consider briefly some of the many points that it helps explain.

### Effects of Audience Selection

The principle of audience selection first helps to explain the diversity of magazines. The number of publics in the United States is reflected in its magazines. Just a short listing of random titles illustrates the wide range of interests that American magazines appeal to: *Church Property Administration*, *American Funeral Director*, *Scholastic Coach*, *World Government News*, *Nature*, *Catholic Miss of America*, *Catholic Boy*, *Garden Gossip*, *Opera News*, *Saddle and Bridle*, *American Swedish Monthly*, *Hot Rod*, *Negro Digest*, *Cats*, *American Rifleman*, *Wallpaper Magazine*, *Brown Swiss Bulletin*, and *Western Family*.

Unlike the newspaper publisher and the radio station owner, the magazine



publisher need not invest in equipment for production. Since he often sees his main job as delivering a desirable reader group to the advertiser and/or designing a product to attract his reader group, he frequently lets someone else do the actual manufacturing of the product he devises. In 1939, according to United States *Census of Manufactures* data, 600 periodical establishments had their own printing facilities as compared with 1,958 which did not. Time, Inc., one of the largest publishers, farms out its printing to independent contractors. So does the *Reader's Digest*. About half of the domestic edition of *Reader's Digest* and all of its Spanish edition are printed by another major magazine publisher, the McCall Corporation, which prints about 25 magazines of other publishers.<sup>6</sup>

Nor is the magazine publisher limited by geography, as are the newspaper publisher and the radio station owner. Individual members of his own chosen public may be scattered over the entire United States. True, the publisher may find it profitable to restrict his circulation to a circumscribed region. *Successful Farming* and *Capper's Farmer*, for example, are aimed primarily at farmers in the Midwestern states; thus their publishers can attract advertisers on the basis of their concentrated circulation in the most prosperous agricultural region in the United States.

In theory, the number of magazines is limited only by the number of special interests or sets of interests with sufficient adherents to support a magazine. That is, if a publisher can find enough

persons with a strong interest or set of interests in common, he may well feel justified in publishing a magazine catering to those interests. If the interests are spread widely throughout the entire population, he may consider depending entirely on reader support and not accepting advertising. To do so, however, he may be forced to price his product beyond the reader's ability or inclination to pay. Therefore, he ordinarily depends on advertising for support.

The introduction of advertising support, however, limits the number of possible magazines. At once the number is limited by at least two considerations: First, how many special interests are there with enough potential buyers of advertisers' goods and services? Second, are there enough advertisers willing to pay the necessary rates for reaching the special interest group the publisher has chosen? In other words, once the publisher has selected his reader group, he must be sure that there are a number of advertisers wanting to reach that group and willing to pay him adequately for the job he has done in attracting his selected audience. Willard Chevalier of McGraw-Hill makes the point in this fashion:

Suppose, for instance, that somebody wants a publication that is only going to secretaries with red hair and blue eyes. The advertiser says, "That is our market. That is the only kind of readers we want — red haired secretaries with blue eyes.

All right, you say, "We will get you a paper for them." That's a . . . chore, because you have to get the editorial material that is only going to appeal to secretaries with red hair and blue eyes. Don't ask me what it is, I don't know. You have to find it. You have a highly selective circulation effort that is going to cost you a lot of

<sup>6</sup> *Standard Corporation Records*, Vol. 29, No. 91B, Sect. 3, May 11, 1951, pp. 5553-55.

money. The result is that when you have figured up your cost of rendering your particular service to that group of advertisers, it is very high per thousand readers. But if those readers are what he wants and you deliver them, he will pay the price, presumably in the form of an advertising rate that justifies the effort you put in to get them.

Audience selection, which helps to explain the diversity of magazines, also makes understandable the absence or relative fewness of certain types of periodicals. The publisher's aim is to deliver to the advertiser a screened audience of good potential buyers. Therefore, it may not profit the publisher to pioneer among low-income groups, although a few magazines have succeeded in this field. Even for comparatively desirable consumers, it may not be profitable to publish a magazine. Assembling the members of a given group and producing a magazine for them may be too costly to justify the effort. Advertisers may not be willing to pay the per-reader cost of reaching the group. And the publisher may not be able to operate successfully without advertising. If he wishes to publish at all, then, he must operate at a loss. A situation of this sort no doubt explains in part the frequent deficits of the so-called "journals of opinion." Throughout most of its history, the *Nation* has had to depend upon philanthropic friends to make up its deficits.<sup>7</sup> The *New Republic* has been underwritten by the Straight family, either directly or through a trust fund, since its establishment in 1914.<sup>8</sup>

<sup>7</sup> See Beulah Amidon, "The *Nation* and the *New Republic*," *Survey Graphic*, January, 1940, pp. 21-26; and Anonymous, "The *Nation's* Future," June 19, 1937, p. 695.

<sup>8</sup> Amidon, *ibid*.

Sometimes, too, it is not profitable for publishers to circulate their magazines among the readers who could most profit from them. A publisher wants not only a large circulation; he wants readers whose buying power will impress advertisers. Thus the now defunct *Country Home* reportedly concentrated its circulation efforts in counties which, according to the *Census* had the greatest number of wealthy farmers — farmers who by virtue of their success were least in need of the educational material that the magazine carried. *Country Home's* least attractive subscription-premium offer was supposedly for the Southeast in order to limit circulation among farmers of low buying power.<sup>9</sup>

The principle of audience selection also helps explain the relatively short life spans of certain types of magazines. A publisher may start a magazine to capitalize on a fad or a passing public fancy; his magazine dies when the fancy fades, if competition hasn't killed it off meanwhile. Although a given publisher may stay in business for years, he may from time to time discontinue his individual publications, to replace them with more profitable ones as he develops more profitable reader groups. Street and Smith, for nearly a century after its founding in 1855, trafficked largely in pulps and blood-and-thunder fiction. Whenever a title slipped in public favor, the publishers dropped it. In April, 1949, the company withdrew entirely from the comparatively unprofitable pulp and comics field to concentrate on the women's field, in which it has such commercial successes as

<sup>9</sup> Harland Manchester, "The Farm Magazines," *Scribner's*, October, 1938, p. 59.

*Mademoiselle, Charm, and Living for Young Homemakers.*<sup>10</sup>

### Editorial Policy and Social Values

The principle of audience selection also helps explain control over editorial content, especially control in its negative aspects. The control stems from commercial sponsorship and the need of magazines to please the largest possible audience within their chosen markets. Two manifestations of this control are worthy of comment—the sameness of editorial fare within a given magazine and the reaffirmation of sanctioned values by magazine content.

If a publisher intends his editorial matter to attract and retain his readers, he will be reluctant to run material which will offend large segments of his audience. "Pleasing the majority," as Joseph T. Klapper says, "necessarily involves hewing to majority views."<sup>11</sup> As the audience widens, there are more and more persons the publisher must be chary of offending; he tends to give his readers what they already agree with. Klapper says: "The more completely mass media content reasserts the existent social mores, the more efficiently does it serve its commercial purpose. To depart from the popularly sanctioned path is to invite economic disaster."

Several studies substantiate Klapper's point that magazine content reaffirms sanctioned attitudes. Popular magazine stories, Berelson and Salter have found, overtly accept the ideology

of racial and religious equality but actually perpetuate minority stereotypes, approve the maintenance of caste lines and, as Klapper puts it, "picture a world where the highest income is reserved for white, American-born gentiles who practice the Protestant ethic."<sup>12</sup> Popular magazine biographies, over the past half-century, Leo Lowenthal has shown, have pictured heroes who have embodied popularly sanctioned values.<sup>13</sup>

If a publisher avoids offending the majority of his readers, he inevitably gives them what he thinks they want. Once a magazine has hit upon an editorial formula it thinks will attract and hold readers, the profitable policy is to fill in the formula month after month, even year after year. Thus there is a sameness to the content of a given magazine. For example, in the *Reader's Digest*, with its tone of unrestrained optimism, one expects anthropomorphic tales of animals, reports of medical marvels, sketches of quaint characters, bits of homely philosophy, and collections of odd facts.<sup>14</sup> Roger Butterfield has observed that the staples of a score of pocket-sized magazines fall under a few such heads as "contemporary celebrities," "quaint historical characters," "the better life," "body troubles,"

<sup>12</sup> Bernard Berelson and Patricia Salter, "Majority and Minority Americans: An Analysis of Magazine Fiction," *Public Opinion Quarterly*, Summer, 1946, pp. 168-90.

<sup>13</sup> Leo Lowenthal, "Biographies in Popular Magazines," in Bernard Berelson and Morris Janowitz, eds., *Reader in Public Opinion and Communication* (Glencoe, Illinois: The Free Press, 1950), pp. 289-98.

<sup>14</sup> See John Bainbridge, *Little Wonder or the Reader's Digest and How It Grew* (New York: Reynal and Hitchcock, 1946), Chap. 6.

<sup>10</sup> *Time*, April 18, 1949, p. 42.

<sup>11</sup> Joseph T. Klapper, "Mass Media and the Engineering of Consent," *American Scholar*, Autumn, 1948, pp. 419-429.



"wonders of nature," and so on.<sup>15</sup> *Good Housekeeping* has had a formula based on a proper mixture of such ingredients as food and nutrition, beauty and toiletries, apparel and accessories, children, home furnishings and management, building and modernization, health, and gardening, all laced with a strong gob of fiction. *Nation's Business* likes articles about sports, health, industrial and business developments, success, and community activities. To get the editorial formula of almost any American magazine, one need but critically examine a half-dozen or so issues.

Especially in nonfiction, a magazine cannot depend on free-lance writers to come through with the articles it wants when it wants them or to give topics the distinctive handling it seeks. Partly for this reason, major magazines are largely planned and written by their staffs. For example, of approximately 360 articles *Collier's* runs during a year, the staff originates the ideas for 90 percent and writes 60 percent. The *American Magazine* originates and writes 90 percent of its 100 articles a year. *Successful Farming* plans and writes about three-fourths of its 650 articles.<sup>16</sup>

### The Financial Dilemma

Balancing himself between readers and advertisers, the magazine publisher is sometimes in a rather precarious position. Indeed, he is faced with an eternal paradox: he needs a large cir-

culatation to make a profit, yet this same large circulation can conceivably ruin him financially.

The paradox is inherent in the system of magazine financing. Nearly all publishers depend on advertising for the bulk of their income. They sell their product to the consumer at less than actual production costs and take their profit from advertising. Yet if advertising volume suddenly drops, and/or if production costs rise rapidly, the publisher must continue to put out his product for the consumer—a product of much the same size and quality as before—if only in hope of regaining the advertising lineage he has lost. Rarely can he reduce his operating costs enough to offset his advertising losses. In fact, production costs may increase when advertising falls off, as J. K. Lasser has pointed out, for the publisher then must often pay for editorial content to take the place of the lost advertising.<sup>17</sup> And even if advertising volume is high, as it is today, costs may outpace adjustments in advertising rates.

This revenue-cost squeeze seems characteristic of the mass media generally. Economist Charles V. Kinter has concluded that while mass communications income is more stable than national income, costs seem to rise more rapidly than income in a boom and fall less in a depression. "Only around the midpoint of a business cycle," he says, "do satisfactory revenue-cost relationships prevail."<sup>18</sup>

<sup>15</sup> Roger Butterfield, "What Pocket Magazines Feed On," *Saturday Review of Literature*, March 9, 1946, p. 5 ff.

<sup>16</sup> Kenneth Marne Baker, *Editorial Requirements for Higher-Paying Magazines*, Unpublished Master's Thesis, University of Illinois, 1951, p. 60.

<sup>17</sup> J. K. Lasser, "How Good Publishing Management Works Today," *Magazine Industry*, Winter, 1950, p. 19.

<sup>18</sup> Charles V. Kinter, "Current Trends in Income of Communications Enterprises," *Journalism Quarterly*, Spring, 1952, p. 147.

Let's examine the foregoing points in detail. Few magazines can succeed on reader revenue alone. Most national magazines get no more than 20 to 30 percent of their revenue from subscriptions and single copy sales, according to J. K. Lasser; for business magazines the figure is 10 percent.<sup>19</sup> The present writer's computations, based on 1947 *Census of Manufactures* data, show revenue from subscriptions and sales to be about 39 percent for all periodicals. A large percentage of what the reader pays goes to cover the cost of getting his subscription and maintaining records of it. Consumer magazines ordinarily spend from 50 to 75 percent of their circulation revenue on expenses directly related to circulation. Because of their highly selective reader groups, business magazines spend much more than that. After the publisher of a consumer magazine has paid his circulation costs, he has enough money left from his readers to pay only about 15 to 20 percent of all other costs of getting out his publication. A business magazine publisher may have less than 3 percent left. By contrast, according to Lasser, the cost of selling advertising is 15 percent of the revenue produced for consumer magazines, about 24 percent for business papers.

With his advertising revenue, as Lasser notes, the publisher has to cover four kinds of expenses: selling advertising, creating the magazine, manufacturing and delivering the magazine, and maintaining an organization. Analyzing the records of 127 profitable publications, Lasser found that in 1949 the publisher divided his advertising dollar in the following fashion:<sup>20</sup>

	<i>Consumer Magazines</i> (cents)	<i>Business Magazines</i> (cents)
<i>Selling the advertising:</i>		
Salesmen's earnings		
and expenses . . . .	7	15
Sales management and		
office . . . . .	3	6
Promotion and adver-		
tising . . . . .	5	3
	15	24
<i>Creating the magazine:</i>		
Editorial staff . . . . .	5	9
Stories, articles, pic-		
tures . . . . .	4	4
Editorial travel and ex-		
penses . . . . .	1	2
	10	15
<i>Manufacturing and deliver-</i>		
<i>ing the product:</i>		
Paper . . . . .	34	9
Printing . . . . .	39	21
Postage and delivery . .	11	4
	84	34
<i>Maintaining an organization:</i>		
Administration, rent,		
overhead . . . . .	4	15
	113	88
Deduct net income		
obtained from read-		
ers (after costs of get-		
ting income) . . . . .	21	3
	92	85
	<u>92</u>	<u>85</u>
Profit before taxes	8	15

But, as Lasser further notes, advertising schedules drop sharply on short notice. And when the publisher's lineage drops, he cannot reduce his expenses enough to compensate for the loss.

	<i>Consumer Magazines</i> (cents)	<i>Business Magazines</i> (cents)
<i>For every dollar drop in</i>		
<i>revenue, these costs come</i>		
<i>down:</i>		
Salesmen's commissions	5	10
Postage and paper for		
page of advertising		
itself . . . . .	25	8
Printing costs . . . . .	16	9
Total cost reduction . .	46	27
<i>Rest of decrease in revenue</i>		
<i>comes out of profit . . . .</i>		
	54	73

Although the publisher of a magazine carrying no advertisements is not affected by declines in advertising vol-

<sup>19</sup> Lasser, *loc. cit.*, p. 19.

<sup>20</sup> Lasser, *loc. cit.*, p. 20.

ume, his predicament can become much the same as that of his ad-accepting brethren. Rising production costs leave him with the choice of covering them from profits or of passing them on to the consumer with a possible loss of sales. For readers on subscription, he has no alternative but to pay rising costs from his own pocket.

Today, with circulations and dollar volume of advertising at record peaks, the profit picture for the magazine industry is gloomy. It has been for the past several years. In 1950, J. K. Lasser estimated, two-thirds of all small magazines were losing money.<sup>21</sup> Among business magazines, advertising rate increases did not offset mounting production costs in 1950, according to the chairman of the cost committee of the 84 Associated Business Publications. Only 74 percent of the magazines in his association showed a profit in 1950, he said, as compared with 82 percent in 1949.<sup>22</sup> The profit outlook for busi-

ness magazines in 1952 was similarly discouraging.<sup>23</sup> And at their annual meeting in June, 1952, members of the National Association of Magazine Publishers worried about the revenue-cost squeeze. Low profits were the "only seriously sour note" in the magazine industry in 1951, Walter D. Fuller, board chairman of Curtis Publishing Company, told them. He did not foresee much higher profits after taxes in 1952 than in 1951.<sup>24</sup>

Risking his capital, then, the magazine publisher is essentially a dealer in homogeneous publics. They may be valuable to him as his own market; more often, they are valuable as something he can sell to the advertiser. The publisher's role as dealer in carefully screened publics has to a rather large degree affected the nature of the American magazine and the industry it supports.

<sup>21</sup> *Tide*, January 25, 1952, p. 53.

<sup>22</sup> *Tide*, June 20, 1952, pp. 39-40.

<sup>21</sup> Lasser, *loc. cit.*, p. 19.

<sup>22</sup> *Tide*, June 1, 1951, pp. 52-53.

# The Savings Bond Program: A Review of Its Objectives and Its Problems

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ON May 1, 1952, the Treasury recast its savings bond offerings to the public. This was the second major remodeling of savings bonds since the program was instituted in 1935. After the outbreak of hostilities in Korea, the savings bond program had been re-emphasized in about its World War II form. However, an intensified sales program was not sufficient to produce a net inflow of dollars to the Treasury from savings bond sales. Under these conditions many proposals were offered for modifying savings bonds in the interest of salability and for the purpose of re-aligning them with current financial conditions.<sup>1</sup>

The new savings bond issues bear a slightly higher interest return and carry less penalty for cashing prior to maturity than did former issues. In addition, two other features have been included in recent alterations: an increase in annual purchase limitations and the offering of new bonds of Series H, J, and K. These new bonds do not differ markedly from former offerings of Series E, F, and G.

It seems that the immediate reasons for these changes are to bolster sales

and to take account of much of the discussion which appeared in financial and professional journals concerning possible modification. In seeking these immediate results, the Treasury appears to have made adjustments which will improve the bond's competitive position. Sales in future months will indicate whether these changes have been successful. It is important, now that the savings bond has been modified, to review the goals served by the bond program in the hope that a reasonably exact perspective may thereby be established.

It has always been clear that public debt operations may be used to accomplish objectives over and above fiscal considerations. For example, Alexander Hamilton believed that if the Federal government assumed war-incurred debts of the several states, the power and prestige of the central Government would be enhanced. During World War I, Secretary McAdoo viewed Liberty bond issues as a means of promoting a sense of patriotism. In more recent times, savings bonds have come to occupy an important place in the public debt structure and have been utilized to promote nonfiscal as well as fiscal ends.

*Scope of This Inquiry.* In recent months there has been considerable discussion about terms of the savings

<sup>1</sup> Proposals for modification have been numerous. Among those suggested are the following: (1) a marketable issue, (2) purchasing power bonds, (3) tax-exempt bonds, (4) increased interest returns, and (5) elimination of the interest penalty for cashing prior to maturity.



bond. These discussions, for the most part, have not dealt with the role of the savings bond in promoting objectives other than the counter-cyclical effect of savings under inflationary conditions. This inquiry seeks to bring the several objectives of the savings bond program into clearer perspective than has heretofore been the case. Since there has been no comprehensive statement of objectives of this particular program by Treasury officials or students of monetary-fiscal affairs, this article will attempt to throw light on such goals. As will be observed, objectives of the savings bond program are not mutually exclusive but are quite definitely interrelated and contributory to over-all Treasury goals.

In response to a questionnaire of the Patman Committee, the Secretary of the Treasury set forth the over-all objectives of the Treasury Department as he saw them. The savings bond program must necessarily function within this general framework. The broad objectives enumerated by the Secretary may be summarized as follows:<sup>2</sup> (1) maintenance of confidence in the Government's credit, (2) utilization of budget policy appropriate to economic conditions, (3) provision of efficient Government service at minimum cost, (4) direction of debt management programs to "counter any inflationary or deflationary pressures," (5) employment of debt policy as well as monetary policy to "contribute to-

ward healthy economic growth and reasonable stability in the value of the dollar," (6) guidance of debt operations to "avoid disruptive effects in the money market," (7) maintenance of relatively low interest rates insofar as this does not conflict with other objectives, (8) assistance "in shaping and coordinating the foreign and financial policy of the United States," and (9) management of gold and silver reserves in a manner consistent with other policy objectives.

The savings bond program, as a part of Treasury policy, is therefore a part of Government policy in its broader sense. In the present inquiry attention is narrowed to the question, What has the savings bond program intended to accomplish during the period from mid-1935 to mid-1952? The outline followed is chronological and therefore the material falls into three major divisions, namely, broadening the base of the public debt, large-scale borrowing, and keeping the debt intact. Within each of these classifications may be found certain ancillary goals.

### Broadening the Base of the Public Debt

For some 17 years Treasury officials have looked upon savings bonds as the broad foundation of the public debt structure. As the program began, this was the major objective sought; as the program continued and as it stands today, this particular objective has retained its original importance. To attain this goal a sales program had to be designed which would increase the number of bondholders. At the same time, an increase in the velocity of

<sup>2</sup> These objectives, along with the Secretary's explanation, may be found in *Monetary Policy and the Management of the Public Debt, Part 1*, Joint Committee Print, 82d Congress, 2d Session (Washington: Government Printing Office, 1952), pp. 8-17.

circulation of currency would be welcome from the point of view of anti-depression policy. Concurrently, a concept of moderate interest rates would be established.

*Increase the Number of Bondholders.* The Secretary of the Treasury at the beginning of the savings bond program, Mr. Henry Morgenthau, Jr., stated this particular objective as follows:<sup>3</sup>

The purpose of this broadening of the base of the public debt was, not that of raising funds—as these were readily available . . . from other sources—but that of increasing the number of persons with a direct financial interest in the affairs of the Government. . . .

On another occasion the Secretary stated:<sup>4</sup>

We in the Treasury wanted to give every American a direct personal stake in the maintenance of sound Federal finances. Every man and woman who owned a Government bond, we believed, would serve as a bulwark against the constant threats to Uncle Sam's pocketbook from pressure blocs and special interest groups. In short, we wanted the ownership of America in the hands of the American people.

These statements by the Secretary indicate clearly that objectives of the savings bond program were not primarily fiscal.

With regard to nonfiscal objectives, Treasury experiences with Liberty

<sup>3</sup> *Summary Report of Secretary Morgenthau to the Congress*, reprinted in the *Annual Report of the Secretary of the Treasury, 1945* (Washington: Government Printing Office), pp. 397-431. The above quotation is from p. 405.

<sup>4</sup> Henry J. Morgenthau, Jr., Address to a Conference of War Finance Workers, delivered at Atlantic City, October 7, 1944. This address is included in the *Annual Report of the Secretary of the Treasury, 1945*, p. 328.

bonds during World War I throw some light on these intentions. Secretary McAdoo felt these issues would bring home to the people their responsibilities for prosecution of the war; bonds would help impress them with the idea that the financial community alone should not be responsible for furnishing all borrowed funds. McAdoo also perceived the psychological sense of unity which could be promoted through widely sold debt obligations.<sup>5</sup>

The present Secretary of the Treasury, Mr. John Snyder, recently stated in response to the Patman questionnaire:<sup>6</sup>

. . . Savings Bonds represent the cornerstone of the Treasury's program for spreading debt ownership as widely as possible among the people of the Nation. I consider this program to be one of the most serious responsibilities of debt management.

Increasing the number of bondholders remains, then, as a primary objective of the savings bond policy. In terms of over-all Treasury objectives, broadening the base of the public debt serves as a contribution to the maintenance of confidence in the credit of the Government.

*Increased Velocity of Currency.* Government policy in 1935 called for restoration of the money supply and increasing price levels. A quickening of velocity of circulation of currency would therefore render some assistance in this respect. Since full confidence in the banking system had not been restored by 1935, there were many in-

<sup>5</sup> William G. McAdoo, *Crowded Years* (New York: Houghton Mifflin Co., 1931), pp. 330 et seq.

<sup>6</sup> *Monetary Policy and the Management of the Public Debt*, op. cit., p. 120.

dividuals who preferred to hold cash or other assets outside the banking system. Recovery efforts might have been hampered if restoration of the money supply happened to be neutralized by failure to return currency to circulation. Given the particular policies being followed in the depression years, savings bonds provided a convenient anti-hoarding device.

As an instrument of recovery, the savings bond could have been only a small part of Government policy. Insofar as the velocity objective is concerned, literature of the Treasury is silent and the goal has been inferred from the general policy decisions of the times. There is, however, a similar objective incorporated in the early postal savings program, i.e., desire to provide an outlet for funds not invested elsewhere, and early postal savings regulations provided for the redeposit of such funds with local financial agencies. There is also a harmony between the circulation objective and the more general objective of the Treasury as reported by Secretary Snyder, namely, utilization of debt management policy to "counter any pronounced inflationary or deflationary pressures."

It is doubtful that an increase in velocity of circulation of currency is actively sought at the present time in the manner that may have been desirable in 1935. In any case, the quantity of funds involved is small relative to total circulation.

*Establish Moderate Interest Rates.* Among other facets of Government policy in 1935 was the establishment of low interest rates. Secretary Morgen-

thau said:<sup>7</sup> "The second major objective of the Treasury's borrowing operations during this period [1935-1940] was to reduce the rate of interest on United States securities; and consequently, on high grade obligations generally." Seen in terms of the Depression setting there was a strong desire to make funds readily and cheaply available to those likely to utilize them either in consumption or investment. After 1935, the reserve position of the banking system was such that low interest rates would prevail, at least for some time in the future.

In 1935, the low interest rate objective was more important in the case of other types of securities than with respect to savings bonds. No claim is made that the savings bond program was expected to accomplish this task singlehandedly. However, in establishing a modest interest rate pattern, savings bonds could be expected to play a minor role by publicizing the fact that pre-Depression rates of 4 or 5 percent were a thing of the past and emphasizing that the public could expect lower returns in the future. While it might be argued that returns on savings bonds were relatively high at this time, the penalty for early cashing made the return substantial only after the lapse of several years.

There were no significant rate modifications in the terms of savings bonds from 1935 to 1952 except that full taxability of such bonds (i.e., on the appreciation or interest thereon) served to lower the yield in terms of dispos-

<sup>7</sup> *Summary Report of Secretary Morgenthau to the Congress, op. cit.*, p. 404.



able income.<sup>8</sup> Since May 1, 1952, the rate has been increased slightly, up to the full 3 percent allowed under the present law. Concerning the interest rate objective, Secretary Snyder, in reply to the Patman questionnaire said:<sup>9</sup>

It would be a serious error to conclude that the Treasury Department believes that holding down the interest cost of the public debt should be the sole or major goal of debt management. I have never believed that it should be. It is only one of the several objectives of Treasury policy, and it is one that is subsidiary to the primary goals of promoting sound economic growth and stability in our financial system.

In following paragraphs, the Secretary goes on to point out, however, that interest costs are nevertheless significant, and that low rates do hold down fixed charges on servicing the debt and thus ease the tax burden.

Although savings bond offerings remained practically unaltered until 1941, the program under which bonds were sold to the public had increasingly searched for wider and wider sales. It was not until 1941 that the bond program was altered in ways which recast the program in a fundamental fashion; under duress of defense it became an instrument for borrowing large sums.

<sup>8</sup> There were, however, minor modifications in the rate schedule if the bond was cashed prior to maturity. For example, Series E carried slightly lower redemption values during the early years after purchase than did Series A through D.

<sup>9</sup> *Monetary Policy and Management of the Public Debt*, op. cit., p. 14.

### Large-Scale Borrowing

National policy in wartime concentrates on one goal: that of winning the war. Other objectives become subservient to the main purpose. Fiscal and monetary policies were designed to furnish the funds necessary to successful prosecution of the war. Although the greatest share of debt was floated through the money market, the current redemption value of all savings bond series outstanding (Series A through G) at the end of fiscal 1945 was about 18 percent of total public debt obligations outstanding at that time.

The Public Debt Act of 1941 altered the savings bond in several respects. Interest on Government securities became fully taxable on all new obligations offered after March 1, 1941, with exceptions for previously existing contractual obligations. Series E was eligible for purchase only by natural persons in an amount not to exceed \$5,000 of maturity value in any calendar year. Two additional series, Series F and G, were offered with a higher annual limitation but lower rates of return. These changes effected the virtual fruition of the program begun in 1935. Noteworthy is the fact that the basic character of the savings bond was unchanged and sales efforts would now be primarily an intensification of techniques already developed in earlier years.

From this point on, only Series E will be considered, because of the fact that Series E continued the basic features and program of the preceding Series A through D. It was in Series E that broadening the base of the



public debt continued and was most successful. Series E was the type of bond most likely to be purchased by inexperienced investors since it contained no special features and was available in small denominations. Series F and G, while nonmarketable, were designed more for the larger investor with particular needs and thus tended to resemble money-market bonds.

Within the objective of borrowing funds were several additional goals. One such goal was to offer the bonds on a voluntary purchase basis; a second was provision of an outlet for patriotic service on the home front; a third was to reduce the amount of immediately spendable assets held by the general public in support of the anti-inflationary program.

*Voluntary Participation.* There was some question during the early period of war finance concerning the best manner in which to obtain individual savings for Government use. From the standpoint of economic stability, strictly speaking, it was more desirable to keep excess cash out of the spending stream than to capture it directly for Government use. However, funds could be obtained for Government use and could be temporarily removed from personal holdings in one stroke by selling savings bonds. With nearly half the nation's productive efforts flowing to the Government, a large pool of cash for which goods and services were not available at usual prices would come to rest in the hands of the public. Of course, contractual savings as well as business savings did account for a very large

part of total savings.<sup>10</sup> Rationing was instituted as a means of securing equitable distribution of the remaining civilian product and necessarily insured large aggregate savings. The problem of war finance was stated in 1942 by Undersecretary Daniel W. Bell as follows:<sup>11</sup>

You all know that incomes are rising while the supply of consumers' goods and services is shrinking. In order to secure a fair distribution of the available supply of consumers' goods and services at the present price level, it will doubtless be necessary to resort to more extensive rationing. To secure such an equitable distribution is the primary purpose of rationing. We should not lose sight, however, of the fact that rationing is also a powerful instrument of war finance. What we cannot spend we must save. Thus rationing is really "compulsory saving," and it may be on a vast scale.

Insofar as savings bonds are concerned, here was an already familiar instrument, known and advertised since 1935 — a bond program already developed and available to absorb savings brought about by rationing and shortages. The question of how best to obtain such savings would naturally arise. Obviously, a voluntary program to sell bonds would bring in large sums to the Treasury. Price control prevented dissipation of savings through higher prices while at the same time provision

<sup>10</sup> It is significant to observe that the greatest share of total savings would necessarily flow to the Treasury simply because ordinary peacetime investments were practically nonexistent.

<sup>11</sup> Address by Undersecretary Bell before the Investment Bankers Association, October 19, 1942, on war financing. Reprinted in the *Annual Report of the Secretary of the Treasury*, 1943, p. 391.

of payroll savings plans alongside thousands of sales outlets stood ready to capture excess funds. In turn, the savings bond provided an excellent alternative to holding cash which might become restive. Sales of savings bonds was thus a two-way street accumulating assets for individuals and supporting Governmental policy at the same time.

Although plans for formal compulsory savings had been discussed,<sup>12</sup> and a plan for a spending tax was submitted to and rejected by Congress, the savings bond program remained voluntary within a framework of powerful appeals. Regarding the voluntary aspects of the program, Secretary Morgenthau stated in 1944:<sup>13</sup>

... From the beginning, we were resolved to avoid certain high-pressure sales tactics which, unavoidably, attended the fund raising of World War I. It was determined that there should be no compulsion, no hysteria, no slacker lists and no invidious comparisons between those who bought bonds and those who did not. There was to be room in this program for the individual with special burdens and responsibilities who could contribute only in very small amounts—and even for the individual who could not share at all. I think you know, and the whole Nation knows, how scrupulously this policy has been observed.

The range of individual differences and the multifarious relationships involved in such a vast undertaking as the bond program during the war pose difficult problems of equity and psy-

chology. Voluntary participation, buttressed by price control and rationing as well as by powerful sales appeals, did prove capable of reducing cash assets of individuals to a noticeable degree. Sales, net of redemptions, show Series E accounting for about 5 percent of disposable personal income during the war years. When it is remembered that savings bonds provided only one avenue for transferring funds to the Treasury, an avenue overshadowed by the huge amounts flowing through other channels, reliance on voluntary techniques not only provided substantial sums for the Treasury but also served to provide the public with an opportunity for patriotic service.

*Opportunity for Patriotic Service.* Like Secretary McAdoo in World War I, Secretary Morgenthau desired to utilize the emotional responses of persons during wartime in the sale of bonds. Volunteer organizations provided an opportunity to serve in a capacity directly related to the war effort and thousands of persons gave of their time and energies in this capacity. Turning these energies to account was described by the Secretary as follows:<sup>14</sup>

There exists in the country today an overwhelming desire on the part of nearly every man, woman, and child to make some direct and tangible contribution to the national defense. We ought to give them a sense of personal participation beyond that which comes from doing their daily job faithfully and well. Every day, letters come to me from people who ask, "What can I do to help?" Our plan to of-

<sup>12</sup> Henry C. Murphy, *The National Debt in War and Transition* (New York: McGraw-Hill and Co., 1950). See Ch. 7, pp. 77-89.

<sup>13</sup> Secretary Morgenthau, Address at Atlantic City, *Annual Report of the Secretary of the Treasury*, 1945, p. 329.

<sup>14</sup> *Ibid.* This statement was originally made by Secretary Morgenthau during hearings on the Public Act of 1941 and was quoted in his speech at Atlantic City.

for securities attractive to all classes of investors is an attempt to answer this question. I think of no other single way in which so many people can become partners of their Government in facing this emergency. It is the purpose of the Treasury to raise money for national defense by methods which strengthen the national morale.

The color and ceremonies which attended war loan drives is well known. Many persons served in less glamorous capacities by occupying a bond booth in public places for several hours a week. Those who sold and those who purchased were thus enabled to understand they were directly contributing to the war effort and had served in a patriotic capacity. At the same time, the Treasury received funds which gave support to the anti-inflationary program.

*Support of the Anti-Inflationary Program.* The savings bond program was only a part of the total anti-inflation program of the Government. It was, however, a significant part of the program in that it not only absorbed cash, but advertised and made prominent the desirability of refraining from attempts to purchase over and above needs. Insofar as the consumer (and others) could be persuaded to use extra dollars for savings, these dollars would not enter the market to bid up prices. The Treasury's approach was outlined in a statement prepared for the United Press in 1943 in which Secretary Morgenthau said:<sup>15</sup>

... While the Treasury's policy is to tax more and borrow less, it is impossible, let alone desirable, to finance the gigantic costs of this war from taxes alone. Gov-

ernment borrowings are therefore necessary. The policy of the Treasury has been to raise as large a proportion of the borrowed funds it requires [*sic*] from individuals, fiduciaries, trusts, and corporations rather than from the banks; to borrow old money rather than new money. This policy, like the others, has a dual purpose. Its wartime purpose is to match the diversion of our production from peacetime to wartime use by corresponding diversion of our income and savings from peacetime to wartime use, thereby contributing to the prosecution of the war by seeing that our production and financial gears mesh smoothly. Its peacetime purpose is to provide the American people with a backlog of savings that will come in good stead indeed when once again the sword is beaten into the ploughshare.

One of the most stable sources of bond revenue was the payroll purchase plan. Under this plan, the wage earner not only automatically took home less cash and more bonds, but authorization for such deduction need be made only once while bond sales continued regularly. Treasury officials recognized the virtues of a regular purchase plan as early as 1937, but the plan was most successful during the war years.

Here, then, the savings bond served as an inducement to forego cash in favor of bonds — some have described this as a conversion to interest-bearing currency—reducing immediately spendable assets thereby keeping dollars off the market. The piling up of these liquid reserves have, of course, been of concern as an inflationary potential since 1944 and particularly as the war outlook grew brighter during 1945. As the reconversion effort took form under continuing inflationary pressures, the problem became one of keeping the debt intact.

<sup>15</sup> Reprinted in the *Annual Report of the Secretary of the Treasury, 1943*, pp. 394-5.



### Keeping the Debt Intact

After 1944, the problem of redemptions on a large scale became of concern. One might guess that payroll savings and other bond programs were either oversold, or that persons were finding it increasingly difficult to save in previously existing ratios, or both. The Treasury was inclined to feel that since a majority of cash-ins were small denomination bonds, "financial emergencies" of small savers was the causal item. At the end of hostilities it was apparent that loss of a major portion of the \$30 billion of Series E outstanding would greatly augment already existing inflationary pressures. To meet such redemptions would have posed a problem in refunding which it was better to avoid than encounter. The cash surplus from the Victory loan might have been used for this purpose, but in any case, extra personal liquidity was hardly desirable at that time.

The threat of large-scale liquidation of savings bonds (of all series) did not develop in the magnitudes which appeared possible after the war's end. The fact that large-scale unemployment did not come about, as many had forecast, served to buoy up incomes and minimize redemptions, thus keeping this part of the debt practically intact. One could argue that the record might have been better. Undoubtedly this is true. Yet, on the other hand, millions of persons faced problems of readjustment of position and location. These adjustments required funds, part of which were released through bond redemptions. Undoubtedly some cash-ins may be explained by the emotional im-

pact accompanying the end of a long, hard war.

After the end of the war in 1945, Treasury officials, together with many other persons, became concerned over the large number of bonds which might be exchanged for cash. Wholesale liquidation of these bonds would have constituted a powerful pressure on prices as the funds released became demand for products still in short supply. From the point of view of over-all Government policy, it was thus of significance to keep this segment of the public debt away from cash status. The over-all objective of the savings bond program became one of keeping the debt intact during transition years.

As the economic climate of postwar years continued inflationary for the most part, use of the savings bond program to promote savings in all forms as a counter-inflationary measure became a part of Treasury policy. Consequently two broad objectives of the savings bond program emerge in the postwar period: economic stabilization and the promotion of thrift.

*Economic Stabilization.* Savings bonds can be a force conducive to economic stabilization; they may act as a reservoir of purchasing power from which to draw in periods of declining prices and economic activity, and furnish an outlet for savings in times of relatively high prices and economic activity. As such, they fit within the framework of general objectives of the Treasury as mentioned earlier, particularly the objective of utilizing debt management policy to "counter any pronounced inflationary or deflationary pressures."



During early postwar years it is clear that the Treasury viewed stabilization policy as calling for restraint on the demand side, and encouraged individuals to retain their bonds. On this point, Secretary Vinson said on November 27, 1945:<sup>16</sup>

... For the present and immediate future, our problem is not the provision of adequate markets for consumers' goods. Our problem is rather that of expediting the production of these goods and holding back the expenditure of our surplus purchasing power. Our reserve of purchasing power should be used to provide jobs and markets tomorrow, rather than wasting itself in driving up prices today.

Years immediately following the end of the war were marked by more or less steady price increases until mid-1948. Under these conditions the Treasury continued to press for bond sales and succeeded in keeping the amount of debt held in savings bonds growing slowly by exceeding redemptions with new sales. In general, from 1947 on, sales did continue to exceed redemptions until June of 1950. Following this latter date, the trend was reversed and persisted at least through February of 1952, the latest date for which figures are available at the time of this writing. This is shown in Table I. Table II shows the amount of savings bonds outstanding from 1941<sup>16</sup> through 1951. This fact of redemptions exceeding sales caused considerable discussion and was apparently responsible for the changes

made in the savings bond offerings after May 1, 1952.

Economic conditions in the postwar period were such that inflationary pressures could be relieved in some measure by savings bond sales. The Federal Reserve System regarded this as a time to promote savings bond sales. Mr. William McC. Martin, Chairman of the Board of Governors, in reply to the Patman questionnaire said:<sup>17</sup>

... The Federal Reserve System voluntarily incurred expenses during the years 1946-50, which were not reimbursed by the Treasury, in promoting the Treasury's general program for selling savings bonds as an anti-inflationary measure.

After the opening of hostilities in Korea in June of 1950, the sales program for savings bonds was re-emphasized but the desire of individuals to acquire goods which might become scarce continued the redemption trend. This point became widely publicized and was more or less taken as an indication of partial failure of the savings bond program. The amount of slippage was not large when compared to the amount of Series E bonds outstanding. The actual excess of redemptions (at current redemption value) over new sales between June, 1950, and February, 1952, for Series E was about \$1.5 billion.<sup>18</sup> This amount, while significant, is not solely responsible for all excesses of expenditure during this period. Since raising funds is only one of several objectives of the savings bond program, it would seem more appropriate to be gratified by the holding power

<sup>16</sup> Secretary Vinson, Address Before the Indiana State Chamber of Commerce and the Indiana War Finance Committee at Indianapolis, November 27, 1945, on transition from war to peace and prosperity. Reprinted in the *Annual Report of the Secretary of the Treasury*, 1946, pp. 290-3.

<sup>17</sup> *Monetary Policy and Management of the Public Debt*, *op. cit.*, p. 325.

<sup>18</sup> *Treasury Bulletin*, various issues.

Table I. Sales and Redemptions, Series E Savings Bonds  
Monthly, June, 1950, to February, 1952  
(In millions of dollars)

Year and Month	Sales at Issue Price	Redemptions at Current Redemption Value	Excess of Redemptions Over Sales
1950: June.....	297	334	37
July.....	318	368	50
August.....	270	394	124
September.....	244	348	104
October.....	271	360	89
November.....	246	318	72
December.....	284	350	66
1951: January.....	343	448	105
February.....	272	362	90
March.....	280	343	63
April.....	254	324	70
May.....	247	339 <sup>a</sup>	92
June.....	244	341	97
July.....	258	338	80
August.....	267	324	57
September.....	230	299	69
October.....	274	322	48
November.....	268	281	13
December.....	254	314	60
1952: January.....	364	406	42
February.....	288	334	46
Total.....			1,474

Source: Compiled from data in various issues of the *Treasury Bulletin*.

<sup>a</sup> After May 1, 1951, these amounts include savings bonds of Series E which were redeemed for bonds of Series G. The amounts so exchanged in the time period given above totaled \$8 million.

of the major portion of Series E outstanding.

*Promoting Thrift.* On many occasions Secretary Snyder has repeated that one of the major objectives of the savings bond program has been and continued to be promotion of thrift in all forms. In his reply to the Patman questionnaire, the Secretary stated:<sup>19</sup>

... The primary objective of the savings bond program—and an objective which we have continually stressed—is the promotion of greater savings; not just savings in the form of Government bonds, but savings of all kinds. It has not been the

intention of the Treasury to specifically compete by means of interest rates with established savings institutions. If the savings bond program succeeds in promoting thrift, savings bonds will benefit along with all other types of savings outlets.

In addition to the anti-inflationary impact of savings, encouraging savings in all forms is an obvious advantage to refinancing existing debt obligations as they mature and to the issuance of new securities when borrowing operations are undertaken. It is highly desirable that a large pool of funds be available for the purchase of such securities. At the same time the sale of savings bonds to individuals raises funds in a manner

<sup>19</sup> *Monetary Policy and Management of the Public Debt*, op. cit., p. 121.

**Table II. Series E Savings Bonds  
Amounts Outstanding (Interest  
Bearing Debt) and Yearly  
Redemptions  
1941 through 1951**

(In millions of dollars)

End of Calendar Year	Amount of Series E Outstanding at Current Redemption Values	Redemptions During the Year
1941.....	1,134	11
1942.....	6,923	209
1943.....	15,957	1,380
1944.....	25,515	3,005
1945.....	30,727	4,963
1946.....	30,263	5,423
1947.....	30,997	3,930
1948.....	32,188	3,728
1949.....	33,766	3,448
1950.....	34,493	3,912
1951.....	34,727	4,036 <sup>a</sup>

Source: *Treasury Bulletin*, August, 1951, and April, 1952, issues.

<sup>a</sup> Includes matured Series E bonds redeemed for cash and matured Series E bonds exchanged for bonds of Series G.

less disturbing to the quantity of money in circulation than if the funds were raised from commercial or Federal Reserve banking sources.

### Concluding Remarks

Objectives of the savings bond program necessarily contribute to the general objectives of the Treasury and thus to over-all Government policy. The most significant savings bond objectives are: first, to broaden the base of the public debt, thereby helping to promote confidence in the credit of the Government; second, under conditions of inflationary pressures, to maintain this segment of the public debt intact;

and third, to promote thrift and the idea of saving generally.

The savings bond has retained its fundamental characteristics for 17 years; during this time there has been some shift in the objectives being emphasized, but there has been no major revamping of the bond itself. Although the effectiveness of the savings bond program cannot be measured by sales volume alone, particularly in the short run, it is certainly necessary to sell bonds to promote Treasury policy. This is particularly true to combat inflationary tendencies. To the small, inexperienced investor, simplicity and the least possible number of changes is desirable. This means that when changes are made, they should be made with a view to their longevity and with reasonable assurance of meeting future needs and conditions. Should inflationary pressures be dominant in the years ahead, and particularly if defense activity increases sharply, it would be well to encourage purchases of savings bonds by modifications which make the bond more attractive. On this point many suggestions have been made and the Treasury cannot be said to lack advice. However, the savings bond program should not be subject to any but the most carefully considered alterations.

The amount of funds reaching the Treasury through Series E sales in the past, while impressive, is nevertheless a small percentage of funds actually disbursed over the same period. This must, however, be considered in the light of the fact that savings bonds provide a direct link between the Government and individuals. This is a very impor-

tant aspect of the program. The Treasury must, therefore, conduct its sales efforts and program in a manner conducive to the individual's appreciation of fiscal affairs generally. The program must be conducted not only with an

eye to the Treasury's needs, but also with an eye to the small individual investor. Only in this manner will the Treasury continue to be successful in its conduct of the savings bond program over the long run.



## Books Reviewed

*Joseph B. Eastman, Servant of the People.* By Claude Moore Fuess. (New York: Columbia University Press, 1952, pp. xv, 363. \$5.00)

There has been no dearth of biographies of public figures such as presidents, cabinet members, congressmen, and Supreme Court justices but, so far as the reviewer is aware, biographies of career men in the Federal government are extremely rare. The present volume by the distinguished biographer and headmaster emeritus of Phillips Andover Academy is therefore unusual. The subject of the biography is well known to political scientists and to most economists but is little more than a name in most other academic circles and not even that to most of the general public. Some explanation or justification for the preparation of the present volume may therefore be appropriate. It will be best to let the biographer speak for himself with respect to this matter: (p. xv)

Why is Joe Eastman worth writing about? Primarily I think because in the kind of democracy to which we seem to be committed the wise administration of governmental departments has come to be of tremendous importance. The bureau heads — cynically called “bureaucrats” — outlast most legislators and must be relied upon for advice when new laws are proposed. Many of them, ossified by the deadening consciousness of authority, settle back into routine placidity, becoming unimaginative, sterile, and obstinate. But Eastman was consistently constructive and therefore made himself almost indispensable. “My job is my life,” he used to say to his friends; “I’d be lost without it.” The highest praise ever bestowed upon him was that he dignified the title “bureaucrat.” In the

various positions which he occupied he demonstrated how an alert, resourceful, and untiring mind can function even in places where the temptation to inertia is strong.

Much of what Eastman did was unsensational and failed to make the arresting headlines reserved for presidents and their cabinet ministers. But work like his is essential for the efficient operation of our increasingly complex government. . . . There has been no finer public servant, strictly as such, in our time.

The first few chapters of this volume skillfully review the history of the Eastmans, the early life of Joseph Eastman, and his education at Amherst College. Dr. Fuess characterizes the Eastman family as “well-behaved middle-class people” (p. 3), although some of them achieved eminence, notably George Eastman, leading spirit in the Eastman Kodak Company. In view of the character and career of Joseph Eastman there may be significance in the biographer’s comment that “An exceptionally large percentage of them [the Eastman clan] chose the missionary professions — teaching and preaching — and rose to positions of leadership in their communities.” (p. 4)

Subsequent chapters deal with Eastman’s apprenticeship at South End House, a social service organization in Boston, and with his work as secretary of the Public Franchise League of Boston and later as a member of the Massachusetts Public Service Commission. The bulk of the volume, very properly, is devoted to his work as a member of the Interstate Commerce Commission, as Federal Coordinator of Transportation, and as Director of the Office of Defense Transportation dur-

ing World War II. These chapters give a fairly comprehensive picture of Eastman's accomplishments and his philosophy of transportation regulation. The biographer recounts Eastman's advocacy of a more extended trial of government operation of railways after World War I; his decision in the controversial Southern Class Rate Investigation; his ill-fated concurring opinion in the O'Fallon case, dealing with railway valuation; his clash with President Roosevelt when the latter, in an effort to secure greater control over the Interstate Commerce Commission, proposed that it be brought under the jurisdiction of one of the cabinet departments; his unsuccessful efforts, while Federal Coordinator of Transportation, to secure the cooperation of management and labor in effecting economies in railway operation; and finally the obstacles which he overcame as Director of the Office of Defense Transportation during World War II. Overwork in connection with the latter duties undoubtedly hastened his death on March 15, 1944, a few months before his sixty-second birthday.

Dr. Fuess writes eloquently of Eastman's ability, integrity, and exceptional devotion to the public interest, but his evaluation is well documented and the reviewer would venture the opinion that few of those familiar with Eastman's work would challenge Dr. Fuess's over-all estimate in any important respect. On the other hand, there are some inaccuracies and oversimplifications in the treatment of the technical aspects of transportation regulation, although the shortcomings of the volume in this respect are fewer than might

have been expected in view of limitations of space and the fact that the biographer's professional career has been in a totally different field.

The study clearly reveals that despite Eastman's exceptional qualifications and performance and his scrupulous avoidance of political activity there is grave doubt whether he would have been appointed or reappointed to the offices which he held had it not been for the efforts of politically influential friends and admirers. Dr. Fuess comments on the fact that Eastman was reappointed by Harding, Hoover, and Roosevelt despite the fact that all three would have been glad to drop him, and ascribes this outcome to the fact that "they did not dare risk the outcry which would have arisen if they had rejected him." (p. xiv) While deference to public opinion was doubtless a factor, especially in the latter part of Eastman's career, a reading of this volume suggests that political expediency, in the sense of a desire to avoid antagonizing persons who might cause trouble within the party, may have been a factor of equal or greater importance in the cases just mentioned.

Thus Dr. Fuess dwells at some length on the part which Louis Brandeis, later Justice Brandeis, played in furthering Eastman's career, remarking that "he was behind the scenes, saying just the right word at just the right time to make it decisive." (p. 81) We read also that President Harding had half-way promised Eastman's post to a friend of Senator Moses of New Hampshire, "who had much influence with the ruling clique of the Republican party" (p. 124), and that it took stren-

uous efforts on the part of several of Eastman's friends to induce Moses to withdraw his candidate and to accept Eastman. Again, in the Hoover administration an effort was made to shelve Eastman by offering him a seat on the Court of Claims. When this device failed, friends had to "line up" the New England congressmen of both parties and secure other endorsements in order to induce President Hoover to renominate Eastman for another term.

Whatever the explanation, one certainly cannot say that it was a foregone conclusion that Eastman would have been appointed or reappointed to the offices which he held, except in the case of his last term as a member of the Interstate Commerce Commission, a term which began less than a year before his death. The fact that such an outstanding public servant as Joseph Eastman could be only partially insulated from political hazards of an undesirable type is a discouraging commentary on the ways of democratic government.

ROBERT W. HARBESON

*American Capitalism: The Concept of Countervailing Power.* By John Kenneth Galbraith. (Boston: Houghton Mifflin Company, 1952, pp. 217. \$3.00)

This is a brief and engaging book. It is done with verve and style. Yet it is the vehicle for one of the most important contributions to political economy in a decade. It is a book that *can* be read and *should* be read by laymen who are interested in understanding the American economy and its future; and it is a book that must be read by economists who are interested in sharpening

their thinking on some of the most basic issues of modern economic life.

That a profound contribution to economics could be presented briefly, wittily, and without ponderous language or complex mathematical apparatus should serve to remind contemporary economists that theirs is a discipline with a distinguished literary tradition. Men like Adam Smith, John Stuart Mill, Alfred Marshall, and J. M. Keynes, were influential economists not only because of their keen analytical insights, but also because of their great literary skill.

Modern economic thought has suffered from a kind of schizophrenia. On the one hand, economists have been interested in the determination of prices, outputs, and employment under assumptions of competition and individual or corporate maximization of return. On the other hand, they have been interested in the phenomenon of great organized power blocs such as huge business corporations, trade associations, farm organizations, cooperatives, and labor unions. But they have never successfully fitted the power blocs, with their combined economic and political power, into the basic economic theory of prices, outputs, and employment. This is what Professor Galbraith has done, and it is this which constitutes his great contribution.

His point of departure is the observed fact that American capitalism "works" despite its apparent non-observance of the rules laid down by Smith, Bentham, Ricardo, and the other early proponents of *laissez faire*. His question is: How does it happen that an economy containing power blocs, administered prices, monopoly, and



public controls can be reasonably successful when all of these things are inconsistent with the traditional ideology of capitalism? He finds the answer in "countervailing" power. He argues that power, whenever exercised resolutely, creates "an incentive to the organization of another position of power that neutralizes it." (p. 119) For example, the power of employers gives rise to labor unions, the power of the buyers of farm products stimulates farm organizations, the power of monopolistic manufacturers encourages mass buying by chain stores or cooperatives, and so forth. Moreover, when no one group is able to achieve the power necessary to counter an oppressor, coalitions are possible.

The theory of countervailing power could easily become the basis of a new theory of *laissez faire*. It could be construed to mean that governmental intervention is not only unnecessary but harmful, and that if individuals and groups are only left to their own devices, a balance of power will be achieved in which no one is able to exploit anyone else, and the economic conditions envisioned by the early advocates of *laissez faire* will be realized. Equilibrium in this case would be achieved through competitive relations among atomistic individuals and firms.

Professor Galbraith makes no extreme claims for countervailing power. He holds that it is the phenomenon which makes capitalism a tenable form of economic organization and renders unnecessary detailed governmental intervention or socialism. In this sense, his theory does constitute a kind of renewal of the older *laissez faire* philos-

ophy. But Galbraith is not a latter-day Bastiat. He recognizes that countervailing power can be made effective only over long periods of time, and that serious problems arising in the shorter run may call for governmental intervention. And even in the longer run, he has no blind faith in the automaticity of countervailing power. He explicitly states that it is one of the prime duties of government to facilitate the attainment of "countervailence" by measures intended to weaken excessive power or to strengthen inadequate power.

Perhaps the main shortcoming of Professor Galbraith's treatment of his theory as a prescription for the future is that he gives inadequate attention to the fairly common tendency of power blocs to try to take over the government itself and thus to suppress countervailing power. As I see it, this is essentially the nature of fascist and communist revolutions. This suggests that the tenability of the theory of countervailing power rests upon the maintenance of liberal democracy with strong guarantees of the rights to freedom of thought, speech, assembly, and organization, and with definite limits on the tactics and ruthlessness with which any power bloc pursues its ends. In the new *laissez faire*, there must be rules for competition among power blocs just as in the old *laissez faire* there were rules for atomistic competition.

In concluding, I can only reiterate my admiration for Professor Galbraith's ideas and my gratitude for his taking the pains to present them so cogently and so engagingly.

HOWARD R. BOWEN



*Basic Methods of Marketing Research.*

By James H. Lorie and Harry V. Roberts (New York: McGraw-Hill Book Company, Inc., 1951, pp. xii, 453. \$6.00)

Lorie and Roberts have prepared a unique and pioneering book. It treats some phases of marketing research in a manner far superior to that found in research texts published previously. The authors have made an excellent presentation of the topics included, but have given us a specialized rather than a general text.

*Basic Methods of Marketing Research* brings together a substantial body of information heretofore widely scattered in the journals. The authors have been bold in deviating from the more or less traditional organization of earlier texts. They have been wise in discarding the many lists of "rules" which, in other texts, are usually sound and valid but frequently presented in something of a vacuum, with their real meaning and impact lost to most students.

In their discussion of "scientific method" they have done an excellent job of making the usually dull discourse on logic come to life. Furthermore, they have integrated this topic with a discussion of hypotheses in a way that gives the student a useful tool of analysis.

It is not unusual for authors to understate the amount of prior preparation required for an understanding of their work or, conversely, to overstate the extent to which they have been able to reduce a highly technical subject to "layman's terms." It is the opinion of the reviewer that Lorie and

Roberts have stated fairly the requirement of an "elementary course in descriptive statistics and the rudiments of statistical inference" as the technical prerequisite for their superior sampling section. Despite this nominal requirement, the reader is brought to the "understanding" stage (though not to the "working" stage) of such concepts as the sampling error and the confidence limits in cluster sampling and in stratified sampling.

In what is probably the outstanding contribution of the book, the authors have developed what might be called a first step toward a "theory of market measurement." Drawing ideas from various sections of the book, something like the following emerges:

One of the prime objectives of marketing research is to obtain measurements of consumer demand. Experimentation provides one avenue of measurement — one which can be relatively free of error, and the results of which can be made to fit the stern requirements of logical inference. Experimentation can possess these advantages because it involves "extraordinary effort and the deliberate alteration of the environment that determines the data." More often than not, the requirements for effective experimentation cannot be met, or the cost is unreasonable.

Short of experimentation, information often may be obtained by the collection of information on behavior under normal or noncontrolled environment. The information might be collected through observation or through communication. A somewhat less satisfactory alternative would be the collec-

tion of information about intentions. This is a communications job. Measurements of demand—direct or indirect—may also be obtained through the collection of information on opinions and attitudes, and, in some cases, through information on people's knowledge and habits of thought. A final method would be to collect information on the "reasons why" certain beliefs are held or certain behavior occurs. This method does not fit logically into this list, but is included for its importance in reinforcing and augmenting the information they provide.

The authors discuss all but the first of the methods mentioned in the 115-page section titled "Communication and Observation." Included in the discussion of each is the usefulness of the information or the type of problem to which it may be applied, the principal techniques used in obtaining the information, and the relative accuracy and cost of information. The organization of this section has much to commend it. As mentioned at the outset, it is quite unlike the organization of prior texts. In the past, research texts have generally been organized around one or more of the following: data collection techniques, research processes (carrying out a project from beginning to end), and areas or marketing fields to which research could be applied. Lorie and Roberts have centered the organization of this section around the basic reporting unit—the respondent—and the usefulness of the respondent in what resembles a range of motivational stages, from knowledge of fact—through opinions, attitudes, and intentions—to overt behavior.

This orientation is commendable because only as we learn more about the mental processes and behavior patterns leading up to purchases will we be able to come anywhere near the achievement of three of the goals that lie ahead of commercial marketing research: the design of precision methods of measurement, the knowledge of what is *really being measured* by a given technique, and the ability to get acceptable levels of reliability at lower costs.

Lorie and Roberts have added little by way of content toward the achievement of these objectives, but they have done a skillful job of marshaling the highlights of what is currently known, and have done so within a framework of organization that should prove helpful not only to the student but to those concerned with research methodology.

A final major section of 102 pages on administration of research is praiseworthy insofar as it gives a better treatment of interviewing than is usual in a general text. It goes further than others in bringing into book form some of the ideas expressed on selecting, training, and supervising interviewers. In general, however, this section is an assembly of the conventional treatment of steps in the research process. It suffers from a condensation which leaves the reader, in places, with the knowledge that such steps exist but without a particularly clear grasp of how to perform them.

In all, Lorie and Roberts have presented a book that should rank at or near the top in its *specialized* field. It will have limited usefulness, however, as a general or beginning text in mar-



keting research, mainly because of its omissions.

The book is not well balanced. The authors cling, implicitly, to the concept that research consists of surveys. They do very well in discussing experimental design, and they pay lip service to observation as a data-collection method, but they devote their major energy (and their best thinking) to surveys and survey sampling.

The title is actually misleading. The authors admit two primary fields for the application of research in marketing: the measurement of demand and the measurement of supply. They chose to limit themselves to the former. Therefore the book might better be called a text in market or consumer research, and not marketing research. The authors quote a listing of specific jobs and applications of marketing research from the National Industrial Conference Board. This is not a particularly good list, but having chosen to use it, the authors misinterpret it by stating that almost all the activities

contained "represent attempts to estimate the willingness of people to purchase goods and services under rigorously specified conditions."

With its limited scope, this book is too far removed from the reality of marketing research practice to permit it any wide acceptance as a general or beginning course in marketing research, or to give it other than narrow usefulness outside the academic field.

Finally, over one-fourth of the content has been devoted to sampling. As mentioned previously, the authors have done an outstanding piece of work on this topic. However, this emphasis, both in space and scope of sampling topics covered, merely reinforces the criticism that the book places undue emphasis on the survey. Had this work been offered merely as an exploration of basic methods in designing and conducting marketing surveys, the bulk of the criticism accorded it would disappear.

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